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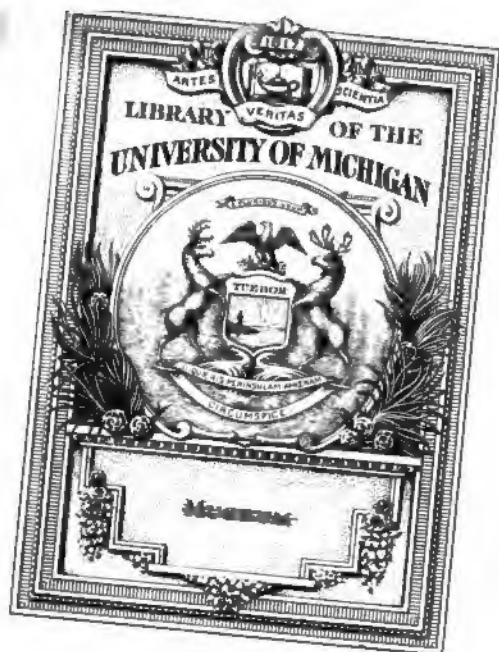
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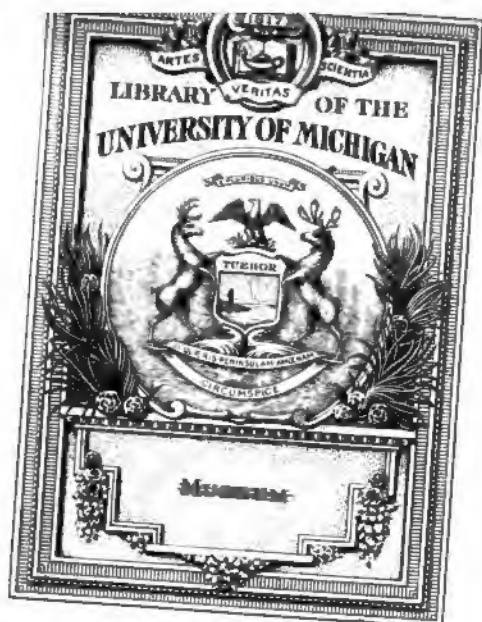
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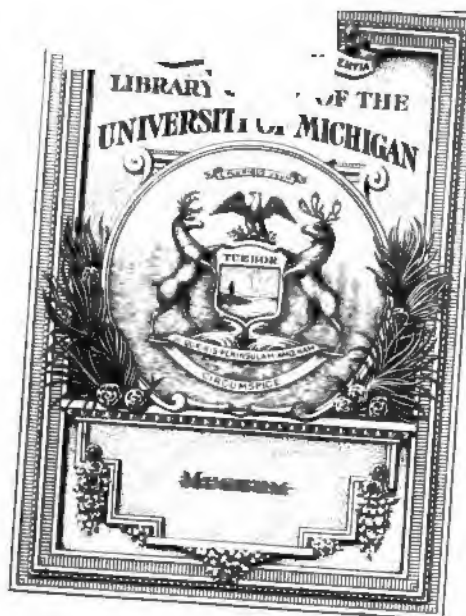
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NATURAL HISTORY SURVEY OF ILLINOIS.

Illinois. STATE LABORATORY OF NATURAL HISTORY.

S. A. FORBES, Director.

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THE
ORNITHOLOGY
OF ILLINOIS.

PART I. DESCRIPTIVE CATALOGUE.

By ROBERT RIDGWAY.

PART II. ECONOMIC ORNITHOLOGY.

By S. A. FORBES.

VOLUME I.

Published by Authority of the State Legislature.



SPRINGFIELD, ILL.:
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1889.

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GENERAL INTRODUCTION.

This volume is the first to appear of a series on the zoölogy and cryptogamic botany of the State of Illinois, authorized and provided for by the Thirty-fourth General Assembly.*

The series is intended to summarize the facts relating to the natural history of Illinois which have been accumulated by general investigations made in the districts of which the State forms a part, by the studies of local naturalists, and by the operations of the State Laboratory of Natural History.

The work of this institution has been especially directed, during the past twelve years, to the supply of the more important deficiencies remaining in our knowledge of the zoölogy and botany of the State. Neglecting the flowering plants and the classification and description of birds and mammals—already fairly well studied for this region,—we have paid particular attention, so far as descriptive work is concerned, to the lower plants, to reptiles, amphibians, and fishes, and to insects and aquatic invertebrates. Still greater prominence has been given to a general research on the system of actions and reactions occurring within the assemblage of living forms native to Illinois, with a view to exhibiting the laws of interaction and coördination by which the innumerable host and vast variety of the plants and animals of our region are held together as a definitely organized, living whole.

As an item of this research the economic relations of the most important groups,—especially of birds, fishes, and insects,

*Laws of the State of Illinois, 1885, p. 23, sec. 3.

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Subject to furnish the materials for a picture of the native plant and animal life of usually exists in our fields, woods, and waters, most prominently into view those parts of the have a peculiar educational or economic value. We have hoped to furnish in this series a solid and is for the study and teaching of the natural history and of its different sections, thus opening to and the teacher the way to a familiar knowledge of his neighborhood in all the relations likely to have it bearing on popular education or on the general welfare and description must furnish the foundation work; but to these will be added accounts of habits, and of relations to nature in detail and at last the state of our knowledge and the funds at our permit.

The here-presented is due to the generous and donors of Dr. Robert Ridgway, formerly of Mt. Carver, an ornithologist whose long and eminent service in the Institution and the United States National Museum have intensified his interest in the promotion of his favorite science in his native State.

The natural and biological part (to be finished in Volume II) followed in that volume by a second part devoted to a detailed discussion of the

eral and economic appendix, it will be so constructed as to make it a practically independent manual of our economic ornithology,—using this term in its broadest sense.

The long delay in the publication of Volume I. has been due partly to the pressure of other duties and to lack of office assistance, but chiefly to the destruction by fire in the printing office, in February, 1887, of an entire edition of the volume and of the plates and cuts from which it was printed.

To the characteristic generosity of the honored and lamented Dr. Spencer F. Baird, we owe the illustrations of this volume, with the exception of the frontispiece,—all being printed from copies of cuts loaned to the Laboratory by the Smithsonian Institution.

S. A. FORBES,

Director of Laboratory.

Champaign, June 30, 1889.


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or partially devoted to a continuation of investigations at the same place. The summer of 1865 was passed at Olney, Richland county, where several birds not observed at Mount Carmel were discovered; while subsequent visits to the same place, including several trips to the neighboring prairies, have further increased his knowledge of the bird-life of that locality.

Without the aid furnished by the collections above referred to, and the assistance kindly rendered by several gentlemen who have been making a special study of the birds of their respective neighborhoods, this catalogue would of necessity have been a purely local one. Mr. H. K. Coale, of Chicago, has most generously placed his note-books, full of valuable records, at the author's disposal, while Mr. Chas. K. Worthen has contributed many important notes; so that, with help from so many sources, together with various local lists, and other publications¹ on the birds of Illinois, it has been possible to prepare a tolerably full list of the birds of the State at large. Much remains to be done, however, especially in the western and extreme southern counties, which are certain to produce important and perhaps unlooked for additions.*

The author has endeavored to make the work as original as the circumstances would allow; but on account of the limited time allotted for its completion (one year), and being mainly occupied with other duties, he has found it necessary to draw, to a certain extent, upon previous publications. Thus, for the land-birds, many of the generic diagnoses have been taken from the *History of North American Birds*,¹ while for the water-birds the descriptions have been copied from *The Water Birds of North America*.² In every case, however, matter which is not original with the present work



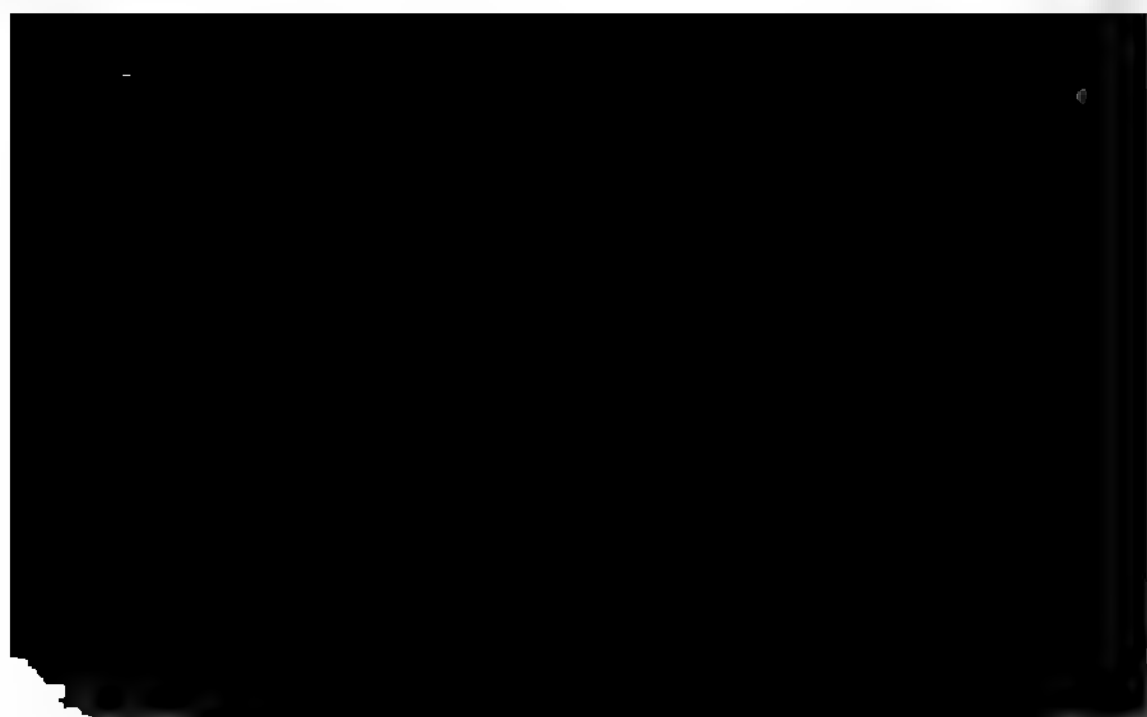
An original feature of the work—the vernacular synonymy*—will enable the reader to more readily identify, by reference to the index, any bird whose local name is known to him but whose scientific name he has not learned. The biographies are necessarily short, but it has been endeavored to mention the more prominent characteristics of each species.

For all faults of omission or commission, the author begs the indulgence of the generous reader. It has been with him so truly a "labor of love" that no effort has been spared to make the work as complete as the circumstances would allow; and it is hoped that it may prove in some degree useful to those who are engaged in the study of our birds.

SMITHSONIAN INSTITUTION, WASHINGTON, D. C.

JULY 2, 1885.

*A vernacular synonymy of North American birds was at one time contemplated by Mr. Earnest Ingersoll, who, in the *Bulletin of the Nuttall Ornithological Club*, Vol. VIII, April, 1883, pp. 72-78, called attention to the desirability of such a work, and gave a very interesting list of the numerous local names of the *Colaptes auratus*. Mr. Ingersoll's plan, however, was unfortunately never carried out; but it is to be hoped that may eventually be consummated.



INTRODUCTION.

I. PHYSICAL FEATURES OF THE STATE.

General. The total length of the State of Illinois is 378 miles, the extremes of latitude being $36^{\circ} 59'$ and $42^{\circ} 30'$, while the maximum breadth is 210 miles. The great length of the State from north to south gives it a climatic range of $5\frac{1}{2}$ degrees, which exceeds that of any other State except California. The topography of Illinois is so simple, however, that any decided differences of climate or temperature must necessarily result from difference of latitude or season, there being no mountains sufficiently elevated to produce any perceptible modification in this respect.

"Illinois occupies the lower part of that inclined plane of which Lake Michigan and both its shores are the higher sections. Down this plane in a very nearly S. W. direction the principal rivers have their courses to the Mississippi. The lowest section of this plane is also the extreme S. angle of the State, and is only 340 ft. above the Gulf of Mexico. The greatest elevation of the country is 1,150 ft., and the mean elevation about 550 ft., above tide water. Next to Louisiana and Delaware, indeed, Illinois is the most level State of the Union. A small tract in the N. W. corner of the State around Galena is hilly and somewhat broken, and there are bluffs on the Mississippi and Illinois rivers; but by far the greater portion of the surface consists of vast level or gently undulating prairies. A low mountain ridge extends across the S. end of the State, from Grand Tower, on the Mississippi to Shawneetown on the Ohio, constituting the fruit region of southern Illinois." (*American Cyclopaedia*.)

The highest point within the State is said to be near the northern border, between Freeport and Galena, where the so-called "mounds" are 1,100 to 1,150 feet above sea-level, though only 200 to 250 feet above the surrounding country. The lowest part of the State is, of course, the river-bed at Cairo, where the elevation above mean tide in the Gulf of Mexico is 340 feet. The general surface in the southern is much more varied or broken than that of the central

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portions, there being a bold, almost mountainous, with an elevation of 500 to more than 600 feet above the country, or a total altitude approximating 1,000 feet above the level, the lowlands along the *northern* side of the river only about 55 feet above the river at Cairo. (Geology of Illinois, Vol. I., pages 3 and 4.)

of this range extend, with occasional breaks or interruptions, to the northward, along the western border of the American Bottom, near Kaskaskia, and stretches northwardly to the point nearly opposite Lake Michigan. A noble limestone bluff rises at right angles to this chain, and stretches along the American Bottom to the point nearly opposite the mouth of the Missouri. This bluff has, in many places, a regular front of limestone, not unfrequently 300 feet high. Another bluff commences opposite the mouth of the Missouri,

at the mouth of the Illinois. Opposite Portage des Sioux, the bluff rises up into detached points and pinnacles, which, of the color of the rocks, have, at a distance, the appearance of spires and towers of a town." ("Illinois in a descriptive of the country," etc. Philadelphia:

The two extremes of the State present vast differences in the character of their vegetation, as might be expected from climatological considerations alone; but some of the most conspicuous dissimilarities arise from causes quite independent of climate. The southern third is for the most part heavily wooded, the northern and central portions mostly prairie. At least, this was the normal or original condition of things before the planting of orchards and shade trees in the prairie districts, and the clearing of forests in the wooded sections changed somewhat their relative proportions. The change thus wrought has been in some respects very great; but it is asserted (and certainly with truth as regards some sections) that the conversion, by Nature's own hand—though through the agency of civilized man by the stoppage of prairie fires—of what were prairies fifty years ago into what are forests at the present time, has very nearly, if not quite, balanced the extent of deforestation.

The northern *Coniferae* are scarcely represented in the sylva of the State, only six (out of ten species found in the Northern States) occurring altogether, and nearly all of these solely in the northern tier of counties, and there locally. Thus, of the pines, *Pinus banksiana* (gray pine) occurs in Cook and Ogle counties*, and *P. strobus* (white pine) in Cook, Winnebago, and Ogle counties; the larch (*Larix americana*) in McHenry, Stephenson, and Winnebago counties, *Juniperus sabina*, var. *procumbens*, in Cook county, and the yew (*Taxus baccata*, var. *canadensis*) in Winnebago and Ogle counties; the only other one occurring in more than two counties being the arbor-vitæ (*Thuja occidentalis*), which has been found in Peoria, Cook and Kane counties. Of the numerous southern and eastern species of *Coniferae*, only four, or possibly five, occur in Illinois, as follows: The bald cypress (*Taxodium distichum*) in the inundated lands of the southern part of the State; the white cedar (*Chamaecyparis sphaeroidea*) in Gallatin county, and the yellow pine (*Pinus mitis*) on the rugged southern hills. It is supposed that a fifth species, the Jersey scrub pine (*Pinus inops*), probably occurs with the last species, since it is very abundant on the "knobs" of southern Indiana. Two species of general distribution, so far as the country at large is concerned, occur both in the northern and southern portions, though they are more or less local, and wanting, too, for the greater part of the State. These are the red cedar (*Juniperus virginiana*) and common juniper (*J. communis*).

* Probably in Lee county also (Aide Professor Forbes, in *epist.*)

As to dicotyledonous trees, it may be said that while only 8 species (i. e., wild red cherry, *Prunus pennsylvanica*; cork elm, *Ulmus racemosa*, and paper or canoe birch, *Betula papyracea*.) are confined to the northern portion of the State, at least 33 species are restricted mainly to the southern half, the following comprising the latter list: Cucumber tree (*Magnolia acuminata*), umbrella tree (*M. umbrellata*), tulip tree (*Liriodendron tulipifera*)*, deoduous holly (*Ilex decidua*), Indian cherry (*Rhamnus caroliniana*), black locust (*Robinia pseudacacia*), water locust (*Gleditschia monosperma*†, Chicasaw plum (*Prunus chicasa*), Washington thorn (*Crataegus cordata*), tree hawthorn (*Crataegus arborescens*), narrow-leaved crab-apple (*Pyrus angustifolia*), sweet gum (*Liquidambar styraciflua*), Hercules' club (*Aralia spinosa*), tupelo gum (*Nyssa uniflora*), huckleberry (*Vaccinium arboreum*), southern buckthorn (*Bumelia lycioides*), southern iron-wood (*B. lanuginosa*), silver bell tree (*Halesia tetraptera*), western catalpa (*Catalpa speciosa*), "privet" (*Forestiera acuminata*), winged elm (*Ulmus alata*), water elm (*Planera aquatica*), Mississippi hackberry (*Celtis mississippiensis*), water hickory (*Carya aquatica*), small shell-bark (*C. microcarpa*), overcup oak (*Quercus lyrata*), Spanish oak (*Q. falcata*), willow-oak (*Q. phellos*), chinquapin (*Castanea pumila*), black alder (*Alnus serrulata*), yellow pine (*Pinus mitis*), white cedar (*Chamaecyparis sphaeroidea*), and bald cypress (*Taxodium distichum*).

The decidedly "Austro-riparian" *facies* presented by the vegetation of the southern counties (north to Wabash and St. Clair) is further illustrated by the parasitic mistletoe (*Phoradendron flavescens*), the arborescent grass, forest-reed, or switch-cane (*Arundinaria tecta*), and the large number of vines, besides the great luxuriance of vege-

number of more or less strictly maritime species, among the most important of which are, during summer, *Ammodromus caudacutus*, *Ægialitis melodus* and *Anas obscura*, and, during the migrations, *Streptilas interpres*, *Tringa bonapartei*, *T. maritima*, *T. canuta*, *Calidris arenaria*, with all the common water-birds, with very few exceptions, found upon the coast at that season. In winter the list is larger, during which season are found *Histrionicus torquatus*, *Harelda glacialis*, the three species of *Edemia*, *Somateria mollissima*, *S. spectabilis*, *Stercorarius pomatorhinus*, *Larus glaucus*, *L. leucopterus*, *L. marinus*, and *Rissa tridactyla*.

"As would be expected, the southern species occur only in summer, with the exception of *Lophophanes bicolor*, which is found only in winter. The principal southern species are: *Mimus polyglottus*, *Parus carolinensis*, *Thryothorus ludovicianus*, *T. bewicki*, *Protonotaria citrea*, *Dendrocæa* var. *albilora*, *D. cærulea*, *Oporornis formosus*, *Icteria virens*, *Myiodiocetes mitratus*, *Pyranga æstiva*, *Collurio* var. *ludoviciana*, *Cardinalis virginianus*, *Centurus carolinus*, *Nauclerus forficatus*, *Rhinogryphus aura*, *Tantalus loculator*, *Gallinula martinica*, *Porzana jamaicensis*, *Sterna regia* and *S. antillarum*.

"We also have, either as residents or transient visitants, the following western species: *Myiadestes townsendi*, *Vireo belli* (breeds), *Hesperiphona vespertina*, *Plectrophanes pictus*, *Ammodromus lecontei*, *Zonotrichia* var. *intermedia*, *Z. coronata*, *Z. querula*, *Spizella pallida* (breeds), *Eremophila* var. *leucolæma* (breeds), *Sturnella* var. *neglecta* (breeds), *Scolecophagus cyanocephalus*, *Pica* var. *hudsonica*, *Chordeiles* var. *henryi* (breeds), *Buteo* var. *calurus* (breeds?), *B. swainsoni* (breeds?) *Tringa bairdii*, *Steganopus wilsoni* (breeds), and numerous others less strictly western.

"Not only is the influence of the Lake upon the fauna shown by the occurrence of numerous species of birds, attracted by the presence of a large body of water with its congenial surroundings, but the influence of the Lake upon the climate and the vegetation in its immediate vicinity has a marked influence upon the list of summer residents.

"As is well known, the country bordering upon the great lakes possesses an average lower temperature during summer, and a higher temperature during the winter, than the surrounding districts. This has a decided effect upon the movements and distribution of the birds in the vicinity of these large bodies of water.

"This influence is seen in a retardation, often of a week or more, in the spring migration, and in the scarcity of small woodland

species during the breeding season. Although birds are exceedingly numerous here during the migrations, and the number of species found during the summer compares favorably with the number found at the same season in other localities having the same latitude, they are represented by decidedly few individuals. This fact is especially noticeable after one has passed a day in the marshes of the vicinity, where the abundance of numerous marsh and water birds, both in species and individuals, would lead one to suppose the woods were equally favored.

"The limits of the field discussed in this paper embrace two counties, Cook county upon the south, and Lake county upon the north. Each possesses certain topographical peculiarities. Cook county is mainly prairie land, interspersed with ridges and groves of timber, the former of which generally extend parallel to the lake shore. Near the southeastern portion of the county the surface of the prairie is but slightly above the level of the lake. Through this county flows the Calumet river, along which are extensive marshes, which form a favorite haunt for various waterfowl. Along the lake shore, in northwestern Indiana, extending thence slightly into Illinois, is the Pinery, a peculiar, sandy, barren tract of land partly covered by a sparse growth of pines and deciduous underbrush, with, near the lake, patches of juniper. Lake county has much more woodland, and is more hilly or rolling than Cook county. Extending along the lake shore, from the northern border of the State nearly the entire length of this county, is a tract quite similar to the Pinery before described, except that here the sandhills near the

they find extensive breeding grounds. This change in the direction of their migration causes them to move diagonally across the northern half of Illinois toward the northeast. To this we are indebted for the vast numbers of migrants found along the lake in this vicinity. Weary from their flight up the Mississippi and Illinois rivers, they halt along the inviting ridges bordering along the lake. After a short rest they resume their northward way, striking boldly across the lake towards their summer homes in northern Michigan and beyond. I have many times stood upon a wooded bluff on the lake shore and seen flock after flock of warblers and other small birds pass out of sight over the lake.

"The fall migration is less uniform, the birds straggling along in such a manner that it is difficult to trace any movement except a general inclination to the south. A severe storm upon the lake during the spring migration works sad havoc among the birds, for when a fog arises they become bewildered and perish by thousands, and large numbers are washed ashore. An instance of this kind occurred the last of May, 1876, when I counted over two hundred birds, representing over fifty species, in walking about a mile along the lake shore."

The Prairies. The author's personal acquaintance with the prairies, their vegetation and their fauna, is very limited. In his section of the State, there is no open or uncultivated prairie nearer to Mount Carmel than 25 miles, the nearest one being Allison's Prairie, opposite the city of Vincennes, Indiana.

In Jasper and Richland counties, prairies of considerable size occur. They are offshoots or arms of the Grand Prairie, although each particular arm or "bay" has its own distinctive name. A few miles west of Olney, Richland county, lies Fox Prairie; and to the southeast of this (the wooded bottoms of the Fox River and tributaries intervening) is Sugar Creek prairie. These two are the only prairies which the writer has explored ornithologically.

The first visit to Fox Prairie was made on the 8th of June, 1871, the writer and his companions arriving a little before noon. A rolling plain spread before us, the farther side bounded by timber, while the prairie itself was free from tree or brush, except where some intersecting stream was followed by a narrow line of thickets, interspersed with occasional fair-sized and gracefully formed elms; or along the edge, where the jungle of sumac, thorn-bushes, wild plum, hazel, etc., backed by young oak and hickory trees, showed plainly the encroachment of the woodland. Herds of horses and

cattle scattered about over the prairie, and two or three neat farm houses, with their attendant orchards and cultivated ground, made us realize that we were yet within the bounds of comfortable civilization, otherwise, the landscape presented much of its primitive aspect. The day was a delightful one; for, although the heat ranged above 80°, the fresh prairie breeze tempered it to a delightful mildness. Resting upon the cool, green sward in the shade of a large elm in the hollow, our ears were delighted by such a chorus of bird songs as we have heard nowhere else. Among the leafy arches overhead the Baltimore Orioles whistled their mellow flute-like notes, or sang a deeply soft, contented warble and joyous carol of the Warbling Vireo; the birds of the meadow were chanting, on every side, their several ditties, while the breeze wafted to us the song of some woodland species. In the scrubby jungle a Mockingbird filled the air with his rich melody of varied notes, thus giving forth a restless ecstasy from branch to branch, wing and tail, or ditting from tree to tree as he sang. A Woodpecker poured forth a ceaseless accompaniment of sharp notes, chiefly upon the summit of a small tree, and a Flicker, starting to the festive, sportive Mockingbird, uttered a series of sharp, rattling notes, like the clacking of a whip.

On the open prairie, comparative quiet reigned. The most numerous bird there was "Dick Cissel" (*Spiza americana*), who monopolized the iron-weeds, uttering his rude but agreeable ditty with such regularity and persistence that the general stillness seemed scarcely broken; hardly less numerous Henslow's Buntings were likewise perched upon the weed-stalks, and their weak but emphatic *se-wick* sounded almost like a faint attempt at imitation of Dick Cissel's song. The grasshopper-like wiry trill of the Yellow-winged Sparrow; the meandering, wavering warble of the Prairie Lark (*Otocoris alpestris praticola*)—coming apparently from nowhere, but in reality from a little speck floating far up in the blue sky,—and the sweet "*peek—you can't see me*" of the Meadow-lark, completed the list of songs heard on the open prairie. Many kinds of birds besides those already described were seen, but to name them all would require too much space. We should not, however, omit to mention the elegant Swallow-tailed Kites, which now and then wheeled into view as they circled over the prairie, or their cousins and companions, the Mississippi Kites, soaring above them through the transparent atmosphere; nor must we forget a pair of croaking ravens who, after circling about for a short time over the border of the woods, flew away to the heavy timber in the Fox River bottoms.

Early in the following August we paid a second visit to the same spot, and found a material change in its aspect. A season of universal drought having passed, the prairie, which before was comparatively brown and sober in its coloring, was bedecked with flowers of varied hue. The Mocking-birds, Brown Thrashers, Chats, and most of the other songsters, were silent, but the shrill screech of a large species of *Cicada* repeatedly startled us as we brushed against the weeds, while numerous grasshoppers were far more noisy than the birds. As we came well out on the prairie, however, a beautiful and unlooked-for sight appeared; in short, we were completely transfixed by the to us novel spectacle of numerous exquisitely graceful Swallow-tailed Kites floating about on bouyant wing, now gliding to the right or left, then sweeping in broad circles, and approaching so near that several were easily shot. Soaring lightly above them were many Mississippi Kites, of which one would now and then close its wings and plunge downward, as if to strike the very earth, but instantly checking the velocity of its fall by sudden spreading of the wings, would then shoot upward again almost to

BIRDS OF ILLINOIS.

which it had descended. When two or more passed at opposite angles—as frequently happened—the sight was extreme.

Number of species observed during these two trips, of the prairie itself, numbered about ninety-five; while the surrounding woodlands, cultivated bottoms added so many more, that a total of one hundred and forty species were ascertained to, in all upon an area five miles square, having for its extent of the prairie where we made our investigations. Only twenty-five were water-birds, the remainder being fifteen species of land-birds being, perhaps, as regular summer residents as any locality of equal area in America can boast.

This prairie was made early in June, 1888—exactly the first trip. The change which had taken place was almost beyond belief. Instead of an absolutely level six miles broad by ten in extreme length, covered with characteristic vegetation, *there remained only 160 acres*. With this insignificant exception, the entire prairie was now thriving farms, with their neat cottages, capable of corn and wheat and even extensive orchards.

The Southern Bottom Lands. As a typical example of a locality presenting the characteristic features of the southern bottomlands, I shall select, for special description, the "Cypress Swamps" of Knox county, Indiana, which, to the writer, have been the scene both of many fruitful explorations and delightful memories.

The series of ponds which, together with their connecting "sloughs," constitute the so-called cypress swamps, are situated on the point of land known as "The Neck," a sort of peninsula between the mouth of White River, on the south and east, and the Wabash, on the west. The most southerly of these ponds lies about two miles to the northeast of Mount Carmel, in a direct line; and interspersed through the forest, at distances from one another of from a hundred yards or less to perhaps a quarter of a mile, are other ponds, varying in their shape, extent and character. Those best known are designated as the "Cypress," "Forked," "Beaver-dam," and "Washburne's" ponds, the latter being the largest. They all drain, by connecting swamps, into White river, a short distance above the mouth of the latter stream, through a crooked ditch, known as the "White River slough," deeply cut through the alluvial soil and everywhere overshadowed by dense forest.

Some of these ponds are mostly open, but others are filled with willow trees (*Salix nigra*), averaging perhaps 50 feet, but occasionally growing more than 70 feet, in height, but of slender form; while even the open ponds have a bordering fringe of these trees, occasionally mixed with swamp cottonwood (*Populus heterophylla*). In the swampy tracts between the ponds grow dense and tangled thickets of button-bush (*Cephalanthus occidentalis*), clumps of black alder or water holly (*Ilex verticillata*), tall stems of *Amorpha fruticosa*, and occasional crooked, thorny trees of the water locust (*Gleditsia monosperma*). The open portions of the ponds are in summer choked with a rank growth of various aquatic plants, the "spatterdock" (*Nuphar advena*) prevailing, but giving way in deeper water to the beautiful western pond lily (*Nymphaea tuberosa*).

The southern cypress (*Taxodium distichum*)—here almost at its northern limit—formerly grew in abundance and attained magnificent proportions about the borders of the ponds and in the intervening swamps, as well as along the main "slough," but at present few fine trees are to be seen. Nowhere do they now form the exclusive or even prevailing growth, but are scattered singly or in groups among tall sycamores, ashes (*Fraxinus americana*), sweet gums (*Liquidambar styraciflua*), water oaks (*Quercus palustris*) and

other moisture-loving trees, and attain an average height of about 100 feet. Good-sized birches, *Betula nigra* (and *lenta*¹), also grow along the margins of the ponds. It should be added that these ponds are nowhere very deep, and that they consequently sometimes become completely dry in seasons of extreme drought.

The surroundings of these ponds consist of continuous magnificent forest (now deprived of many of its finest trees and no doubt doomed to early destruction), comprising everywhere a mixed growth, embracing altogether more than fifty species of trees, among which oaks (11 species) and hickories (5 species) predominate, although the sweet gum, black gum (*Nyssa sylvatica*), box-elder (*Negundo aceroides*), white elm (*Ulmus americana*), honey-locust (*Gleditschia triacanthos*), coffee-bean (*Gymnocladus canadensis*), black walnut (*Juglans nigra*), hackberries (*Celtis occidentalis* and *mississippiensis*), tulip tree (*Liriodendron tulipifera*), and other species are (or were) also abundant; there are also a few beeches (*Fagus ferruginea*), and black cherries (*Prunus serotina*), besides occasional specimens of the beautiful *Catalpa speciosa*. These woods are very open, it being comparatively easy, in many places, to drive through them with a light wagon. There is almost no shrubby undergrowth, the usual underwoods consisting of red-bud (*Cercis canadensis*), dog-wood (*Cornus florida*), pawpaw (*Asimina triloba*), and mulberry (*Morus rubra*) here attaining the stature of good-sized trees. The unobstructed sunlight, which, directly or by reflection and diffusion, freely permeates all portions of these beautiful forests, promotes the development of a luxuriant and varied herbaceous growth—grasses, sedges, ferns, flags, balsam-plants (*Impatiens fulva* and *pullii*), car-

bird-life, and therefore afford the richest field for the ornithologist. The willows are the chosen home of the Prothonotary Warbler (*Protonotaria citrea*); the undergrowth, of the Hooded and Blue-winged Yellow Warblers (*Sylvania mitrata* and *Helminthophila pinus*); ducks and other aquatic species have a secure home in the shelter of the water-lilies; herons build their nests in the lofty tops, and turkey buzzards hide their young in the hollow bases, of the gigantic sycamores. Thirty years or more ago, Parakeets (*Conurus carolinensis*) disturbed the solitude or drowned the voices of the songsters by their piercingly shrill screeching notes, but they have long since vanished, never to return. The turkey still lingers, however, but must surely disappear when its shelter shall have passed away.

Climate. The climatic conditions of Eastern North America are remarkably uniform, as might be expected from the exceeding simplicity of its topographical features. The Alleghany mountains, although sufficiently elevated to carry on their summits many Canadian types, both of plants and animals, quite to the southern limits of the range, in northern Georgia and Alabama, yet form so slight a barrier that a very large majority of the species in both the animal and vegetable kingdoms are common to the Atlantic seaboard and the Mississippi Valley. In fact, diversity of flora in the two regions is usually due chiefly to local causes—character of soil and geological formation—it being a common circumstance to find localities along the Atlantic coast and in the interior which more resemble one another in their vegetation than do contiguous localities in either district.

It is a well known fact, however, that in the interior of large continents the climate reaches greater extremes of temperature than in the same latitudes along the seacoast; and this principle applies to the districts here under consideration, though to a very slight extent. From the meteorological records of the United States Signal Office, we are able to deduce the information that, as a rule, in cases where the mean annual temperature is essentially the same at places of corresponding latitude on the Atlantic coast and in the Mississippi Valley, the annual range is greater in the latter; that is, the maximum heat of summer and minimum cold of winter excel those of the former. The rainfall also, as a rule, is somewhat heavier along the coast. There are many exceptions, however, to these rules, and instances can be found where, according to the records, they are reversed.

RIADS OF ILLINOIS.

to this subject we cannot, in the present work, enter must be content with presenting a few data by way of the above remarks.

es and Results of the Precipitation, in Rain and Snow States," collected and published (in 1872 and 1881) sonian Institution, Professor Charles A. Schott, the gnizes (pp. 127--188 of first edition, 197-203 of second eographical areas, each of which is characterized by arities in the distribution and quantity of the rainfall.

chiefly if not entirely within "Type IV" of these ng the Ohio Valley, which is characterized as follows:

maximum, and one principal minimum; the former , the latter early in February. Range, moderate."

to be compared, in the illustration of our subject, Atlantic seacoast from Portland to Washington," which

early equal maxima, about the middle of May, August and one principal minimum about the beginning of

the range between the extreme monthly values d "the August maximum generally the highest."

however, mere technical differences, only appreciable able by, the meteorologist.

Following data* we shall dismiss this subject:—

Cincinnati, Ohio.—Lat. $39^{\circ}6'$, alt. 620.42 feet.

Mean annual temperature (8 years)..... $55^{\circ}3$.

Total annual rainfall (8 years).....42.39 inches.

Baltimore, Md.—Lat. $39^{\circ}28'$, alt. 45.19 feet.

Mean annual temperature (8 years)..... $55^{\circ}5$.

Total annual rainfall (8 years).....42.46 feet.

St. Louis, Mo.—Lat. $38^{\circ}37'$, alt. 567.67 feet.

Mean annual temperature (8 years)..... $55^{\circ}5$.

Total annual rainfall (8 years).....39.67 inches.

Washington, D. C.—Lat. $38^{\circ}53'$, alt. 105.56 feet.

Mean annual temperature (9 years)..... $55^{\circ}1$.

Total annual rainfall (9 years).....42.73 inches.

II. *Comparative mean monthly and annual temperature and rainfall at Cairo, Illinois, (lat. $37^{\circ}0'$, alt. 377.35 ft.) and Norfolk, Virginia (lat. $36^{\circ}51'$, alt. 54.50 ft.), for 10 years.*

Maximum Mean Annual Temperature for 10 Years.

	Year of ob- servation.	January..	February..	March.....	April.....	May.....	June.....	July.....	August....	September	October...	November.	December	Annual mean.
Cairo	1878	39.8	44.7	57.8	64.3	68.1	73.9	82.7	81.2	70.6	50.0	54.1	33.2	56.62
Norfolk.....	1876	47.7	45.0	46.5	56.3	65.7	78.1	81.7	78.2	69.7	56.8	49.4	33.6	58.23

Minimum Mean Annual Temperature for 10 Years.

Cairo	1875	28.3	32.9	44.8	54.8	65.8	74.2	78.9	73.6	67.5	55.2	45.9	45.6	55.63
Norfolk	1872	35.0	37.0	39.0	57.9	68.0	76.0	81.0	79.0	72.0	58.9	46.2	36.8	57.20

Average Mean Annual Temperature for 8 Years.

Cairo.....	57.9
Norfolk.....	58.7

Mean Annual Rainfall for 10 Years.

	January..	February..	March.....	April.....	May.....	June.....	July.....	August....	September	October...	November.	December.	Total*,
Cairo	3.97	3.50	4.39	4.31	3.80	4.64	3.83	3.88	3.51	3.02	4.06	3.42	42.83
Norfolk	3.59	3.05	4.21	3.98	3.27	4.02	5.36	6.36	4.91	3.69	3.83	4.36	50.54

*The comparative rainfall of the two localities, as given in the report of the Chief Signal Officer for 1880, is as follows:—

Cairo, 8 years, (1871-79).....46.99 inches.

Norfolk .. " ..53.85 "

BIRDS OF ILLINOIS.

taken at West Salem, Edwards Co., Illinois, (lat. 38° 30'), for 4 years, give almost exactly the same total for the year as that which, according to the above is ascertained for Cairo, the difference amounting to .01 inch. The monthly means are considerably different, as the following will show. In this table are also the results of observations at New Harmony, Posey Co., Ind. (lat. 38° 08', long. 87° 50'), for 12 years—both being compared with the Smithsonian tables of precipitation, above referred to.

Year.....	December.	November	October	September	August.	July.....	June.....	May.....	April.....	March....	February.	January.
West Salem, Ill., 1888-91.....	43.38	41.13	44.09	41.74	42.83	45.11	50.43	50.43	44.38	42.04	35.47	28.32
New Harmony, Ind., 1878-89.....	38.75	36.09	38.21	35.25	37.87	39.19	46.03	46.76	36.56	33.40	25.51	17.72

is apportioned to the different seasons, as follows:

Winter..	Fall.....	Summer	Spring ..
10.46	8.66	12.77	10.34
5.57	9.23	6.85	10.04

	Precipitation.	Mean temperature
January	9.35	42.1°
February	2.71	39.6
March	6.04	40.6
April	3.83	56.1
May	1.79	65.1
June	6.34	74.0
July	1.68	80.1
August	3.81	76.2
September	2.63	67.8
October	1.74	54.9
November	2.10	41.0
December	1.95	23.4
Total precipitation	42.39 in.	
Mean annual temperature		55.3°

The largest rainfall in 24 hours during 1876 was 2.60 inches. The maximum heat for the year was 97°, and greatest degree of cold during the winter 1876-7 was 0° (zero).

Rainfall during the year commencing June 16, 1884, was as follows:

June	0.38
July	2.06
August	1.29
September	5.35
October	2.33
November	1.97
December	7.59
January	3.81
February	1.48
March	0.95
April	1.69
May	2.75
June	3.59

Total for the year 35.23 inches.

Maximum precipitation during 24 hours in 1883 4.40 inches.

Maximum precipitation during 24 hours from June 16,

1884, to June 15, 1885 2.09 inches.

Maximum temperature for summer of 1884 +96°

" " " 1885 +98

Minimum temperature for winter of 1883-4 -25°

" " " 1884-5 -15°

The following are a few of the unusually heavy rainfalls for localities in Illinois as recorded in the report of the Chief Signal Officer for 1880:

Louisville. 2 inches in 5 hours (Jan. 2, 1880), 5 inches in 2 hours (July 1, 1878). *Peoria:* 3.94 inches (May 8, 1880). *Rock Island:* 3.74 inches (June 1, 1880). *Cairo:* 3 inches in 90 minutes (June 27, 1879). *Elmira:* 3.29 inches in 1 hour 55 minutes (August 19, 1878.) *Chicago:* 4.14 inches (July 26, 1878).

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|-------------------------------------|--|
| 67. <i>Branta canadensis</i> . | 80. <i>Charitonetta albeola</i> . |
| 68. <i>Branta hutchinsii</i> . | 81. <i>Histrionicus histrionicus</i> . |
| 69. <i>Anas boschas</i> . | 82. <i>Clangula hyemalis</i> . |
| 70. <i>Anas obscura</i> . | 83. <i>Oldemia perspicillata</i> . |
| 71. <i>Anas strepera</i> . | 84. <i>Merganser americanus</i> . |
| 72. <i>Dasila acuta</i> . | 85. <i>Merganser serrator</i> . |
| 73. <i>Anas americana</i> . | 86. <i>Lophodytes cucullatus</i> . |
| 74. <i>Anas discors</i> . | 87. <i>Larus argentatus</i> . |
| 75. <i>Anas carolinensis</i> . | 88. <i>Larus delawarensis</i> . |
| 76. <i>Aythya vallisneria</i> . | 89. <i>Colymbus holboellii</i> . |
| 77. <i>Aythya americana</i> . | 90. <i>Urinator imber</i> . |
| 78. <i>Glaucionetta islandica</i> . | 91. <i>Urinator lumme</i> . |
| 79. <i>Glaucionetta americana</i> . | |

B. *Species which have been observed in Winter only in the Southern portion of the State, (latitude of Mount Carmel, or further South).*

The following list is based in part upon the observations of Mr. Cyrus W. Butler, "during the month of December and January," in the vicinity of Anna, Union Co., lat. 37° 30', as recorded by Mr. W. W. Cooke, in *Forest and Stream* for Jan. 1 and 8, 1885,* but chiefly on the author's observations at Mount Carmel, about one degree farther northward.

- | | |
|---------------------------------------|---|
| 1. <i>Turdus pallasi</i> . | 28. <i>Molothrus ater</i> . |
| 1a. <i>Turdus swainsoni</i> . | 29. <i>Xanthocephalus xanthocephalus</i> . |
| 2. <i>Mimus polyglottos</i> . | 30. <i>Agelaius phoeniceus</i> . |
| 3. <i>Galeoscoptes carolinensis</i> . | 31. <i>Scolecophagus carolinus</i> . |
| 4. <i>Harporhynchus rufus</i> . | 32. (<i>Scolecophagus cyanocephalus</i>). |
| 5. <i>Regulus calendula</i> .† | 33. <i>Quiscalus æneus</i> .† |
| 6? <i>Parus carolinensis</i> . | 34. <i>Sayornis phœbe</i> . |
| 7. <i>Certhia americana</i> . | 35. <i>Ceryle alcyon</i> . |
| 8. <i>Thryothorus bewickii</i> . | 36. <i>Strix pratensis</i> . |
| 9. <i>Cistothorus palustris</i> . | 37. <i>Pandion carolinensis</i> . |
| 10. <i>Cistothorus stellaris</i> . | 38. <i>Cathartes aura</i> . |
| 11. <i>Dendroica coronata</i> . | 39. <i>Catharista atrata</i> . |
| 12. <i>Dendroica pinus</i> . | 40? <i>Zenaidura macroura</i> . |
| 13. <i>Dendroica palmarum</i> . | 41. <i>Nycticorax nævius</i> . |
| 14. <i>Selurus noveboracensis</i> . | 42. <i>Botaurus lentiginosus</i> . |
| 15. <i>Poocætes gramineus</i> . | 43. <i>Ægialitis vociferus</i> . |
| 16. <i>Ammodramus savanna</i> . | 44. <i>Philohela minor</i> . |
| 17. <i>Ammodramus passerinus</i> . | 45. <i>Gallinago delicata</i> . |
| 18. <i>Ammodramus henslowi</i> . | 46. <i>Rallus elegans</i> . |
| 19. <i>Ammodramus lecontei</i> . | 47. <i>Rallus virginianus</i> . |
| 20. <i>Zonotrichia leucophrys</i> . | 48. <i>Porzana carolina</i> . |
| 21. <i>Spizella socialis</i> . | 49. <i>Porzana noveboracensis</i> . |
| 22. <i>Spizella pusilla</i> . | 50. <i>Porzana jamaicensis</i> . |
| 23. <i>Melospiza fasciata</i> . | 51. <i>Gallinula galeata</i> . |
| 24. <i>Melospiza georgiana</i> . | 52. <i>Fulca americana</i> . |
| 25. <i>Melospiza lincolni</i> . | 53. <i>Spatula clypeata</i> . |
| 26. <i>Passerella iliaca</i> . | 54. <i>Aix sponsa</i> . |
| 27. <i>Pipilo erythrophthalmus</i> . | 55. <i>Aythya marila</i> . |

* See Bibliography, p. 42.

† Professor Forbes writes me that "Mr. Garman has shot this species a little past the middle of winter near Normal," (McLean county).

: Has been known to winter at Normal (*vide* Professor Forbes).

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| 56. <i>Aythya affinis</i> . | 60. (<i>Stercorarius longicaudus</i>) |
| 57. <i>Aythya collaris</i> . | 61. <i>Colymbus auritus</i> . |
| 58. <i>Erismatura rubida</i> . | 62. <i>Colymbus caufortensis</i> . |
| 59. <i>Phalacrocorax dilophus</i> . | 63. <i>Podilymbus podiceps</i> . |

NOTE.—The interrogation mark prefixed to some of the above species, implies doubt as to whether they are restricted, as winter residents, to the southern portion of the State. Species enclosed in parenthesis may be considered as accidental, being based on a single known occurrence.

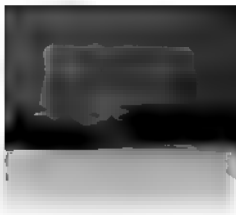
C. Species occurring in Winter in the Northern portion of the State, but not yet observed as far South as Mount Carmel, are the following:

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|--|-------------------------------------|
| 1. (<i>Myadestes townsendi</i>) | 17. <i>Bubo subarcticus</i> . |
| 2. (<i>Sialia arctica</i> .) | 18. <i>Surnia caparoch</i> . |
| 3. (<i>Parus hudsonicus</i> .) | 19. (<i>Lagopus lagopus</i> .) |
| 4. <i>Lanius borealis</i> . | 20. <i>Somateria dresseri</i> . |
| 5. <i>Ampelis garrulus</i> . | 21. <i>Somateria spectabilis</i> . |
| 6. <i>Coccythraustes vespertina</i> . | 22. <i>Oldemia americana</i> . |
| 7. <i>Pinicola enucleator</i> . | 23. <i>Oldemia velvetina</i> . |
| 8. <i>Acanthis exilis</i> . | 24. <i>Rissa tridactyla</i> . |
| 9. <i>Acanthis rostratus</i> . | 25. <i>Larus glaucus</i> . |
| 10. <i>Plectrophenax nivalis</i> . | 26. <i>Larus leucopterus</i> . |
| 11. <i>Calcarius pictus</i> . | 27. <i>Larus marinus</i> . |
| 12. (<i>Rhynchophanes maccooni</i> .) | 28. <i>Xema sabini</i> . |
| 13. (<i>Pica hudsonica</i> .) | 29. <i>Sterna tschegrava</i> . |
| 14. <i>Picoides arcticus</i> . | 30. <i>Stercorarius pomarinus</i> . |
| 15. <i>Uula cinerea</i> . | 31. <i>Urinator arcticus</i> . |
| 16. <i>Nyctala richardsoni</i> . | |

NOTE.—Species in parenthesis may be considered as accidental.

D. Summer residents of General Distribution.

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|---------------------------------------|------------------------------------|
| 1. <i>Turdus mustelinus</i> . | 25. <i>Seiurus aurocapillus</i> . |
| 2. <i>Merula migratoria</i> . | 26. <i>Seiurus motacilla</i> , S. |
| 3. <i>Mimus polyglottos</i> , S. | 27. <i>Geothlypis formosa</i> , S. |
| 4. <i>Galeoscoptes carolinensis</i> . | 28. <i>Geothlypis trichas</i> . |



INTRODUCTION.

27

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| 49. <i>Poocastes gramineus</i> , N. | 99a. <i>Circus hudsonius</i> . |
| 50. <i>Ammodramus passerinus</i> . | 100. <i>Accipiter cooperi</i> . |
| 51. <i>Ammodramus henslowi</i> . | 101. <i>Accipiter fuscus</i> . |
| 52. <i>Chondestes grammacus</i> . | 102. <i>Buteo borealis</i> . |
| 53. <i>Spizella socialis</i> . | 103. <i>Buteo lineatus</i> . |
| 54. <i>Spizella pusilla</i> . | 104. <i>Buteo swainsoni</i> . |
| 55. <i>Pipilo erythrophthalmus</i> . | 105. <i>Buteo pennsylvanicus</i> . |
| 56. <i>Cardinalis cardinalis</i> S. | 106. <i>Haliaeetus leucocephalus</i> . |
| 57. <i>Passerina cyanea</i> . | 107. <i>Cathartes aura</i> , S. |
| 58. <i>Spiza americana</i> . | 108. <i>Ectopistes migratoria</i> . |
| 59. <i>Molothrus ater</i> . | 109. <i>Zenaidura macroura</i> . |
| 60. <i>Agelaius phoeniceus</i> . | 110. <i>Meleagris gallopavo</i> . |
| 61. <i>Sturnella magna</i> . | 111. <i>Bonasa umbellus</i> . |
| 62. <i>Icterus galbula</i> . | 112. <i>Tympanuchus pinnatus</i> . |
| 63. <i>Icterus spurius</i> , S. | 113. <i>Colinus virginianus</i> . |
| 64. <i>Quiscalus aeneus</i> . | 114. <i>Ardea herodias</i> . |
| 65. <i>Corvus sinuatus</i> . | 115. <i>Ardea virescens</i> . |
| 66. <i>Corvus americanus</i> . | 116. <i>Nycticorax nyctius</i> . |
| 67. <i>Cyanocitta cristata</i> . | 117. <i>Botaurus lentiginosus</i> . |
| 68. <i>Otocoris praticola</i> . | 118. <i>Botaurus exilis</i> . |
| 69. <i>Tyrannus tyrannus</i> . | 119. <i>Aegialitis vociferus</i> . |
| 70. <i>Myiarchus cinerascens</i> . | 120. <i>Aegialitis melodus</i> , N. |
| 71. <i>Sayornis phoebe</i> . | 121. <i>Philohela minor</i> . |
| 72. <i>Contopus virens</i> . | 122. <i>Totanus solitarius</i> . |
| 73. <i>Empidonax traillii</i> . | 123. <i>Actitis macularia</i> . |
| 74. <i>Empidonax acadicus</i> . | 124. <i>Symphemia semipalmata</i> . |
| 75. <i>Trochilus colubris</i> . | 125. <i>Bartramia longicauda</i> . |
| 76. <i>Chaetura pelagica</i> . | 126. <i>Numenius longirostris</i> , N. |
| 77. <i>Antrostomus vociferus</i> . | 127. <i>Phalaropus tricolor</i> , N. |
| 78. <i>Chordeiles virginianus</i> . | 128. <i>Recurvirostra americana</i> . |
| 79. <i>Dryobates villosus</i> . | 129. <i>Himantopus mexicanus</i> . |
| 80. <i>Dryobates pubescens</i> . | 130. <i>Rallus elegans</i> . |
| 81. <i>Oeophloeus pileatus</i> . | 131. <i>Rallus virginianus</i> , N. |
| 82. <i>Melanerpes carolinus</i> , S. | 132. <i>Porzana carolina</i> , N. |
| 83. <i>Melanerpes erythrocephalus</i> . | 133. <i>Porzana noveboracensis</i> . |
| 84. <i>Colaptes auratus</i> . | 134. <i>Porzana jamaicensis</i> . |
| 85. <i>Ceryle alcyon</i> . | 135. <i>Gallinula galeata</i> . |
| 86. <i>Coccyzus americanus</i> . | 136. <i>Fulica americana</i> . |
| 87. <i>Coccyzus erythrophthalmus</i> . | 137. <i>Grus americana</i> , N. |
| 88. <i>Conurus carolinensis</i> . | 138. <i>Grus mexicana</i> . |
| 89. <i>Strix pratineola</i> , S. | 139. <i>Branta canadensis</i> . |
| 90. <i>Asio wilsonianus</i> . | 140. <i>Anas boschas</i> . |
| 91. <i>Syrnium nebulosum</i> . | 141. <i>Anas discors</i> , N. |
| 92. <i>Megascops asio</i> . | 142. <i>Aix sponsa</i> . |
| 93. <i>Bubo virginianus</i> . | 143. <i>Erismatura rubida</i> . |
| 94. <i>Falco peregrinus</i> . | 144. <i>Lophodytes cucullatus</i> . |
| 95. <i>Falco columbarius</i> . | 145. <i>Phalacrocorax dilophus</i> . |
| 96. <i>Falco sparverius</i> . | 146. <i>Sterna forsteri</i> . |
| 97. <i>Pandion carolinensis</i> . | 147. <i>Hydrochelidon surinamensis</i> , N. |
| 98. <i>Elaenoides forficatus</i> , S. | 148. <i>Podilymbus podiceps</i> . |
| 99. <i>Ictinia mississippiensis</i> , S. | |

NOTE.—The initial S. following a name indicates that the species is more abundant southward; "N," on the other hand, implies that the species so distinguished belongs chiefly to the northern portion of the State.

E. *Summer residents confined mainly, so far as known, during that season to the Northern portion of the State.*

- | | |
|---|----------------------------------|
| 1. <i>Turdus fuscescens.</i> | 23. <i>Sturnella magna.</i> |
| 2. <i>Turdus swainsoni.</i> | 24. <i>Empidonax minimus.</i> |
| 3. <i>Parus atricapillus.</i> | 25. <i>Asio accipitrinus?</i> |
| 4. <i>Sitta canadensis.</i> | 26. <i>Nyctala acadica.</i> |
| 5. <i>Helminthophila chrysoptera.</i> | 27. <i>Circus hudsonius.</i> |
| 6. <i>Helminthophila ruficapilla.</i> | 28. <i>Aquila chrysaetos?</i> |
| 7. <i>Dendroica pennsylvanica.</i> | 29. <i>Pedioetes campestris.</i> |
| 8. <i>Dendroica virens.</i> | 30. <i>Egialitis melodus?</i> |
| 9. <i>Seturus noveboracensis.</i> | 31. <i>Gallinago delicata.</i> |
| 10. <i>Geothlypis philadelphia.</i> | 32. <i>Totanus melanoleucus.</i> |
| 11. <i>Sylvania canadensis.</i> | 33. <i>Totanus flavipes.</i> |
| 12. <i>Vireo philadelphicus.</i> | 34. <i>Anas obscura.</i> |
| 13. <i>Carpodacus purpureus.</i> | 35. <i>Anas strepera.</i> |
| 14. <i>Ammodramus nelsoni.</i> | 36. <i>Anas americana.</i> |
| 15. <i>Zonotrichia albicollis.</i> | 37. <i>Dafus acuta.</i> |
| 16. <i>Spizella pallida.</i> | 38. <i>Spatula clypeata.</i> |
| 17. <i>Melospiza fasciata.</i> | 39. <i>Anas carolinensis.</i> |
| 18. <i>Melospiza georgiana.</i> | 40. <i>Aythya affinis.</i> |
| 19. <i>Melospiza lincolni.</i> | 41. <i>Aythya collaris.</i> |
| 20. <i>Habia ludoviciana.</i> | 42. <i>Sterna hirundo.</i> |
| 21. <i>Dolichonyx oryzivorus.</i> | 43. <i>Colymbus auritus.</i> |
| 22. <i>Xanthocephalus xanthocephalus.</i> | 44. <i>Urinator imber.</i> |

NOTE.—The interrogation mark implies doubt as to whether the breeding range of the species is really so restricted.

F. *Summer residents which, so far as known, are confined mainly to the Southern portion of the State.*

- | | |
|--|-----------------------------------|
| 1. <i>Heliaina swainsoni.</i> | 8. <i>Ardea egretta.*</i> |
| 2. <i>Peuceea bachmani.</i> | 9. <i>Ardea candidissima.</i> |
| 3. <i>Guiraca cœrulea.</i> | 10. <i>Ardea cœrulea.</i> |
| 4. <i>Antrostomus carolinensis.</i> | 11. <i>Ardea rufa.</i> |
| 5. <i>Campylorhynchus albigularis.</i> | 12. <i>Nycticorax nycticorax.</i> |

H. Irregular or casual Visitants from the Western Province.

- | | |
|--|---|
| 1. <i>Sialia arctica</i> . (Winter.) | 7. <i>Pica hudsonica</i> . (Winter.) |
| 2. <i>Myadestes townsendi</i> . (Winter.) | 8. <i>Sayornis sayi</i> . (Season not known.) |
| 3. <i>Rhynchophanes maccowni</i> . (Winter.) | 9. <i>Bubo subarcticus</i> . |
| 4. <i>Zonotrichia querula</i> . (Spring and fall.) | 10. <i>Falco mexicanus</i> . (Fall.) |
| 5. <i>Junco oregonus</i> . (Fall.) | 11. <i>Buteo krideri</i> . (Summer.)* |
| 6. <i>Scolecophagus cyanocephalus</i> . (Winter.) | 12. <i>Buteo calurus</i> . (Spring.) |
| | 13. <i>Archibuteo ferrugineus</i> . (Fall.) |
| | 14. <i>Anas cyanoptera</i> . |

I. Regular Residents or Visitants which intrude from the Westward.*a. Observed only in Summer.*

1. *Vireo bellii*. (Breeding.)
2. *Spizella pallida*. (Breeding.)
3. *Xanthocephalus xanthocephalus*. (Breeding.)
4. *Chordeiles henryi*. (Breeding?)

b. Observed only in Winter, or during migration.

5. *Coccothraustes vespertinus*.
6. *Ammodramus lecontei*. (Breeding?)
7. *Colymbus californicus*.

c. Observed irrespective of season.

8. *Chondestes grammacus*. (Breeding.)
9. *Sturnella neglecta*. (Breeding.)
10. *Buteo swainsoni*. (Breeding.)
11. *Pediocætes campestris*. (Breeding.)

J. Stragglers and doubtful species, the former including those of which not more than one specimen has been taken or observed.

- | | |
|------------------------------------|---|
| 1. <i>Sialia arctica</i> . W. | 8. <i>Buteo calurus</i> . W. |
| 2. <i>Myadestes townsendi</i> . W. | 9. <i>Buteo krideri</i> . N. W. |
| 3. <i>Parus hudsonicus</i> . N. | 10. <i>Buteo harlani</i> . S. |
| 4. <i>Junco oregonus</i> . N. | 11. <i>Asturnia plagiata</i> . S. |
| 5. <i>Passerina ciris</i> . S. | 12. <i>Ardea occidentalis</i> . S. |
| 6. <i>Pica hudsonica</i> . N. | 13. <i>Pelecanus fuscus</i> . S. |
| 7. <i>Sayornis sayi</i> . W. | 14. <i>Phalacrocorax mexicanus</i> . S. |

* Probably breeding.

K. *Species formerly occurring but possibly but now to be found in the State.*

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|------------------------------------|----------------------------|
| 1. <i>Pica hudsonica.</i> | 4. <i>Lagopus lagopus.</i> |
| 2. <i>Campephilus principalis.</i> | 5. <i>Ajaja ajaja.</i> |
| 3. <i>Conurus carolinensis.</i> | |

Position with regard to Faunal Provinces or Districts.—

Illinois lies far within the Eastern, or Atlantic, Province, and were it not for the prairies its fauna would probably not possess the slightest tinturing of western forms. The State is also wholly embraced within the "Carolinian Fauna" of Mr. Allen;* but the southern portion possesses so many of the elements characterizing the "Louisianian Fauna" (or "Austroriparian Province" of Professor Cope†), that it should probably be referred to the latter district—and has, in fact, been so referred by Mr. Allen, Professor Cope and other writers.

With regard to so-called geographical variation Illinois likewise belongs strictly to the Eastern or Atlantic Province, none of the resident or summer-resident species showing any tendency toward the representative forms which belong to the Western Province, except very rarely, or sporadically, and apparently not more frequently than along the Atlantic coast itself. The writer has been able to obtain but a single example of *Pipilo erythrophthalmus* showing white spots on wing-coverts or scapulars, and this example has these markings less distinct than have two specimens obtained at Washington, D. C. He has been able to secure but one specimen of *Sphyrapicus varius* showing an indication of a red nuchal bar, and in this case also the feature is less developed than in one from the District of Columbia. Among more than one

In the southern portion of the State, there is observable in some species a marked tendency to the characters of extreme southern races, in smaller size and darker coloration, and, in some species, larger bill. This tendency is especially noticeable in the quails (*Colinus virginianus*) from the bottom-lands of the lower Wabash, some specimens of which are so much like the Florida form (*C. virginianus floridanus*) that they have been referred to that race.

Migrations.—Data for the elucidation of this subject are unfortunately very meagre. While residing at Mount Carmel, the author made careful record of the dates of arrival and departure of many species during the years 1863-'66, inclusive, the results of which are herewith given:—

Spring Arrivals.

Species marked with an asterisk (*) sometimes remaining all winter.

*1. <i>Anas boschas</i>	January	15.
*2. <i>Ectopistes migratoria</i>	"	15-Feb. 25.
*3. <i>Nafla acuta</i>	"	20.
*4. <i>Branta canadensis</i>	"	20-Feb. 14.
*5. <i>Merganser americanus</i>	"	20.
*6. <i>Spatula clypeata</i>	"	20.
*7. <i>Aythya americana</i>	"	25.
*8. <i>Anas carolinensis</i>	February	1.
*9. <i>Anas americana</i>	"	13-23.
10. <i>Selurus motacilla</i>	"	20.
*11. <i>Aix sponsa</i>	"	25.
*12. <i>Anas discors</i>	"	23.
13. <i>Grus mexicana</i>	March	1-4.
14. <i>Grus americana</i>	"	4.
*15. <i>Charitonetta albeola</i>	"	1.
16. <i>Phalacrocorax floridanus</i>	"	1-7.
17. <i>Charadrius dominicus</i>	"	12.
18. <i>Spizella socialis</i>	"	13-19; remains until Sept. 20.
19. <i>Tringa maculata</i>	"	15.
20. <i>Tachycineta bicolor</i>	"	15-24; remains until Sept. 20.
21. <i>Progne subis</i>	"	20-28; remains until Sept. 2.
*22. <i>Harporhynchus rufus</i>	"	21-26.
23. <i>Bartramia longicauda</i>	"	23.
24. <i>Regulus calendula</i>	April	1-9.
25. <i>Meiortila varia</i>	"	1-15.
26. <i>Chelidon erythrogastra</i>	"	2-5.
27. <i>Poliioptila cœrulea</i>	"	2-10; remains until Sept. 20.
28. <i>Chætura pelagica</i>	"	3-11; remains until Oct. 20.
29. <i>Numenius longirostris</i>	"	4.
30. <i>Stelgidopteryx serripennis</i>	"	8-12; remains until Oct. 17.
31. <i>Dendroica albiflora</i>	"	9-18; remains until Sept. 13.
32. <i>Petrochelidon lunifrons</i>	"	10-20; remains until Sept. 20.
33. <i>Dendroica æstiva</i>	"	14-23.
34. <i>Vireo noveboracensis</i>	"	15.
35. <i>Tyrannus tyrannus</i>	"	15-21; remains until Sept. 9.

*36. Dendroica palmarum	April	15-23; remains until Oct. 15.
37. Antrostomus vociferus	"	17.
*38. Galeoscoptes carolinensis	"	18-24; remains until Oct. 5.
39. Icterus galbula	"	19-22, remains until Sept. 14.
40. Icterus spurius	"	19-25.
41. Passerina cyanea	"	19; remains until Oct. 15.
42. Vireo flavifrons	"	19; remains until Oct. 15.
43. Empidonax traillii	"	19.
44. Empidonax acadicus	"	19.
45. Myiarchus cinerascens	"	19-26; remains until Sept. 10.
46. Turdus mustelinus	"	19-21; remains until Oct. —.
47. Vireo philadelphica	"	20.
48. Piranga erythromelas	"	20-23; remains until Sept. —.
49. Piranga rubra	"	20-29; remains until Sept. 27.
*50. Geothlypis trichas	"	20-30; remains until Sept. 16.
51. Spiza americana	"	22-30.
52. Vireo olivaceus	"	22; remains until Oct. 15.
53. Protonotaria citrea	"	23.
54. Icteria virens	"	23-May 4.
55. Dendroica pennsylvanica	"	26.
56. Geothlypis formosa	"	28; remains until Oct. 15.
57. Dolichonyx oryzivorus	"	28-May 7.
58. Coccyzus americanus	"	29-May 14.
59. Chordeiles virginianus	May	2-8.
60. Dendroica tigrina	"	3.
61. Contopus virens	"	6-7; remains until Oct. 15.
62. Habia ludoviciana	"	6; remains until Oct.

Autumnal Arrivals.

1. Sphyrapicus varius	September 15-23.
2. Ampelis cedrorum*	" 18.
3. Junco hyemalis	" 26-Oct. 21.
4. Certhia americana	" 29-Nov. 2.
5. Dendroica coronata	October 1-4.
6. Sitta canadensis	" 2.
7. Regulus satrapa	" 2.

To show the relation between the return of birds from the South and the vernal change of vegetation, I give the following dates of the leafing and flowering of certain plants at Mt. Carmel, as noted in the spring of 1872, by Dr. J. Schneck. It should be remarked, however, that the season was much later than usual. (See footnote below.)

Species.	Date of leafing.	Date of flowering.
Red Maple (<i>Acer rubrum</i>)	April 12....	March 20*...
Silver Maple (<i>Acer dasycarpum</i>)	" 12....	April 8....
Sugar Maple (<i>Acer saccharinum</i>)	" 15....	.....
Shell-bark Hickory (<i>Carya alba</i>)	" 13....	.....
Redbud (<i>Cercis canadensis</i>)	" 20....	April 10....
Wild Cherry (<i>Prunus serotina</i>)	" 5....	" 25....
Flowering Dogwood (<i>Cornus florida</i>)	" 20....	.....
White Ash (<i>Frazinus americana</i>) .....	.....	April 12....
Tulip Poplar (<i>Liriodendron tulipifera</i>)	April 4....	.....
Peach (<i>Persica vulgaris</i>)	" 20....	April 12....
Apple (<i>Pyrus malus</i>)	" 13....	" 20....
White Oak (<i>Quercus alba</i>)	" 13....	.....
Lilac (<i>Syringa vulgaris</i>)	" 19....	April 12....
American Elm (<i>Ulmus americana</i>) .....	.....	March 30†...
Wild Columbine (<i>Aquilegia canadensis</i>)	April 20....	.....
Spring Beauty (<i>Claytonia virginica</i>)	" 6....	April 12†....
Dogs-tooth Violet (<i>Erythronium americanum</i>)	" 20....	.....
Crane's-bill (<i>Geranium maculatum</i>)	" 25....	.....
Liverwort (<i>Hepatica triloba</i>) .....	.....	March 31‡..
Blue Flag (<i>Iris versicolor</i>)	April 13....	.....
May Apple (<i>Podophyllum peltatum</i>)	March 30....	.....
Blackberry (<i>Rubus villosus</i>)	April 10....	.....
Elder (<i>Sambucus canadensis</i>)	March 30....	.....
Blood-root (<i>Sanguinaria canadensis</i>)	April 12 ...	April 14....

* In 1876, flowered February 1.

† In 1876, flowered February 15.

‡ In 1876, flowered March 2.

§ In 1876, flowered March 2.

The date of flowering of additional species, in 1876, was noted by Dr. Schneck, as follows:

Species.	Date of leafing.	Date of flowering.
<i>Ranunculus abortivus</i>	March 1....	.....
<i>Capsella bursa-pastoris</i>	" 1....	.....
Pear (<i>Pyrus communis</i>)	April 1....	April 20-24°
Apple (<i>Pyrus malus</i>)	March 30 ..	April 20+ ..
White Oak (<i>Quercus alba</i>)	April 24 ..	.....
Currant (<i>Ribes rubrum</i>)	March 23....	April 13+ ..
Blackberry (<i>Rubus villosus</i>)	" 30....	May 10+ ..
Elder (<i>Sambucus canadensis</i>)	April 2....	June 15....
Blood-root (<i>Sanguinaria canadensis</i>)	March 16....	April 2....
Lilac (<i>Syringa vulgaris</i>)	April 13 ..	April 30....
Dandelion (<i>Taraxacum dens-leontis</i>) .....	.....	April 13....
White Elm (<i>Ulmus americana</i>)	April 13....	March 25....

For purpose of comparison, I give below the earliest and latest recorded dates of arrival for a number of species at Mt. Carmel, Illinois; Wheatland, Indiana; St. Louis, Missouri, and Washington, D. C.,—localities in nearly the same latitude. For the latter, I am indebted to Mr. H. W. Henshaw and Mr. Wm. Palmer, of Washington, who have kindly given me their records; the data for St. Louis, I have compiled from Mr. Otto Widman's "General Notes and Weather Report from St. Louis," published in Bulletin No. 1

	Mt. Carmel, Ill., 1883-84.....	Wheatland, Ind., 1881-1883.....	St. Louis, Mo., 1883	Washington, D. C., 1873-1884.....
1. <i>Antrostomus vociferus</i>	April 17.....	April 15.....	April 1..	April 18-May 11
2. <i>Comptothlypis americana</i>.....	.....	" 16-18.....	" 17	May 6-13.....
3. <i>Geothlypis trichas</i>	April 29-30.....	" 18-18.....	" 17	April 22-May 1.
4. <i>Vireo olivaceus</i>	" 22.....	" 16-21.....	" 25	.....
5. <i>Vireo noveboracensis</i>	" 15.....	" 16-18.....	" 14	April 18-28.....
6. <i>Empidonax minimus</i>.....	.....	" 17.....	May 5...	April 20-May 2
7. <i>Turdus mustelinus</i>	April 19-21.....	" 17-18.....	April 19.	April 28-May 2
8. <i>Sylvania mitrata</i>.....	.....	" 25.....	" 17.	.....
9. <i>Seiurus aurocapillus</i>.....	.....	" 16-20.....	" 17.	April 20-May 7
10. <i>Tyrannus tyrannus</i>	April 18-21.....	" 16-19.....	" 18.	May 3.....
11. <i>Vireo gilvus</i>.....	.....	" 17-24.....	" 18.	.....
12. <i>Vireo flavifrons</i>	April 19.....	" 17.....	" 17.	.....
13. <i>Dendroica vigoensis</i>.....	.....	" 17-19.....	" 21.	Mar. 15-May 12
14. <i>Dendroica albilora</i>	April 9-18.....	" 17.....	" 12.	.....
15. <i>Dendroica aestiva</i>	" 14-22.....	" 17-18.....	" 18.	April 28-May 5
16. <i>Dendroica cerulea</i>.....	.....	" 17-25.....	" 17.	.....
17. <i>Dendroica palmarum</i>	April 16-23.....	Apr. 18-(May 2.)	" 13.	April 15.....
18. <i>Dendroica virens</i>.....	.....	" 18-(May 3.)	.....	May 7-11.....
19. <i>Helminthophila pinus</i>.....	.....	April 18-23.....	April 17.	.....
20. <i>Sylvania canadensis</i>.....	.....	" 18-30.....	May 14*	May 14-15.....
21. <i>Passerina cyanea</i>	April 19.....	" 18-30.....	April 21.	May 9-12.....
22. <i>Chondestes grammacus</i>.....	.....	" 19-21.....	" 3	.....
23. <i>Piranga erythromelas</i>	April 20-23.....	" 18-30.....	" 27	May 11-13.....
24. <i>Piranga rubra</i>	" 20-29.....	" 18-23.....	" 26.	.....
25. <i>Ochetura pelagica</i>	" 3-11.....	(" 18.)	" 8.	.....
26. <i>Myiarchus crinitus</i>	" 19-23.....	" 18-19.....	" 17.	.....
27. <i>Galeoscoptes carolinensis</i>	" 18-24.....	" 19-20.....	" 18.	April 30.....
28. <i>Turdus aliciae</i>.....	.....	" 20.....	.....	May 12.....
29. <i>Turdus fuscescens</i>.....	.....	" 21-25*.....	May 14.	May 14.....
30. <i>Icteria virens</i>	April 23-May 4	" 22-26.....	April 23.	May 2-24.....
31. <i>Trochilus colubris</i>.....	.....	" 24-25.....	May 11.	.....
32. <i>Helminthos vermivorus</i>.....	.....	Apr. 24-(May 8.)	.....	May 7-14.....
33. <i>Dendroica pennsylvanica</i>	April 26.....	" 24-(May 3.)	April 27.	May 10-11.....
34. <i>Spiza americana</i>	" 22-30.....	April 24-28.....	" 21.	.....

	Mt. Carmel, Ill., 1883-86	Wheatland, Ind., 1881-1883	St. Louis, Mo., 1883	Washington, D. C., 1875-1884
35. <i>Icterus galbula</i>	" 19-23	Apr. 24—(May 4.)	" 19.	April 23—May 4
36. <i>Geothlypis formosa</i>	" 28	April 20-30*	May 2	.....
37. <i>Setophaga ruticilla</i> . . . . .	.....	" 25	April 17.	April 20—May 2
38. <i>Habia ludoviciana</i>	May 8	" 30-35	" 22	.....
39. <i>Coccyzus americanus</i>	April 29—May 14	" 25	May 16	.....
40. <i>Ammodramus passerinus</i> . . . . .	.....	" 26	April 26.	.....
41. <i>Contopus virens</i>	May 6-7	" 26—May 2	May 5.	.....
42. <i>Icterus spurius</i>	" 19-25	" 19—29	April 18.	May 1-8
43. <i>Dendroica castanea</i> . . . . .	.....	Apr. 30—May 10.	May 3	.....
44. <i>Dendroica maculosa</i> . . . . .	.....	May 2-5	" 3	.....
45. <i>Dendroica caerulescens</i> . . . . .	.....	" 2-6	" 3.	April 23—May 7
46. <i>Chordeiles virginianus</i>	May 2-8	April 24—May 2.	" 15	May 11-15
47. <i>Dendroica blackburniae</i> . . . . .	.....	May 3-8	.....	May 11-6
48. <i>Helminthophila peregrina</i> . . . . .	.....	" 3-7	April 25.	.....
49. <i>Helminthophila chrysoptera</i> . . . . .	.....	" 5.	May 2	.....
50. <i>Dolichonyx oryzivorus</i>	April 29—May 7.	" 5.	" 2	May 11 15
51. <i>Geothlypis philadelphia</i> . . . . .	.....	" 6.	" 16.	.....
52. <i>Helminthophila ruficapilla</i> . . . . .	.....	" 6.	" 2.	.....
53. <i>Dendroica tigrina</i>	May 3	" 6-9	" 2.	.....
54. <i>Vireo philadelphicus</i>	April 30	" 9.	April 21.	.....
55. <i>Dendroica striata</i> . . . . .	.....	" 10	May 2	May 11 23

1855.

PRATTEN, HENRY.—Catalogue of the birds of [southern] Illinois [Wayne and Edwards counties]. <*Trans. Ill. State Agri. Soc.*, I. (for 1853-54), p. 598-609. [184 species.]

KENNICOTT, ROBERT.—Catalogue of the animals observed in Cook county, Illinois. [Birds.] <*Trans. Ill. State Agric. Soc.*, I. (for 1853-54), pp. 580-589. [187 species.]

KENNICOTT, R.—Species observed in the middle and southern portions of the State which are not given in Mr. Pratten's catalogue of the birds of Southern Illinois. <*Trans. Ill. State Agric. Soc.*, I. (for 1853-54), pp. 589-591.

• 1856.

KENNICOTT, R.—Notes of the Occurrence of *Plotus anHINGA* and *Tantalus loculator* in Southern Illinois. <*Pr. Boston Soc. Nat. Hist.*, V., 1856, p. 391.

1857.

BRENDEL, F.—Vögel der Umgegend Peorias in Illinois. <*Giebel's Zeitsch. für Naturw.*, 1857, p. 420. [Not seen by me.]

1858.

CASSIN, JOHN.—Remarks on *Falco polyagrus*. <*Proc. Acad. Nat. Sci. Phila.* 1858, p. 1. [Specimens obtained near Rock Island, Illinois.]

1859-60.

HOLDER, R. H.—Birds of Illinois. <*Trans. Ill. State Agric. Soc.*, IV., 1859-60, pp. 605-613. [A nominal list of 247 species.]

1862.

HOLDER, R. H.—Catalogue of the birds of Illinois, (2nd ed.) <*Trans. Ill. Nat. Hist. Soc.*, I. 1862, pp. 77. [Not seen; "enumerates 248 species."]

1863.

ALLEN, J. A.—[Some remarks upon the birds of Iowa and Illinois, read by the secretary of the Society.] <*Pr. Boston Soc. Nat. Hist.*, XII., 1863, p. 85. [Not seen.]

ALLAN, J. A.—Notes on birds observed in Northern Illinois, in June, 1867. <Mem. Boston Soc. Nat. Hist., I., 1868, pp. 502-522. 91 species.]

1872.

RIDGWAY, ROBERT.—New birds in Southern Illinois. <Am. Nat., July, 1872, pp. 430-431. *Vireo bellii*, *Peucaea aestivalis*, (= *P. aestivalis bachmani*), *Cyanospiza* (= *Passerina*) *crista*, *Asterua plumbea* and *Falco polyagrus* added to the fauna of the State (Fox Prairie, Richland county).]

1873.

RIDGWAY, ROBERT.—The Prairie Birds of Southern Illinois. <Am. Nat., VII., April, 1873, pp. 197-203. Based on observations made on Fox Prairie, Richland county, in June and August, 1871.]

1874

RIDGWAY, ROBERT.—Catalogue of the birds ascertained to occur in Illinois. <Ann. Lgc. Nat. Hist., N. Y., X., January, 1874, pp. 364-394. [A list of 311 species, with range of each within the State approximately indicated.]

RIDGWAY, ROBERT.—The Lower Wabash Valley, considered in its relation to the Faunal Districts of the Eastern Region of North America; with a synopsis of its Avian Fauna. <Pr. Boston Soc. Nat. Hist., XVI., February 18, 1874, pp. 304-332.

1876.

NELSON, E. W.—Additions to the Avi-fauna of Illinois, with notes on other species of Illinois birds. <*Bull. Nutt. Orn. Club*, I., No. 2 July, 1876, pp. 39-44. [The species added are, *Myiadestes townsendi*, Waukegan, December 16, 1876; *Ooturniculus lecontei*, Riverdale, May 13, 1875; *Ammodromus caudacutus* var. *nelsoni*, Calumet Lake, &c., June, September, November; *Chordeiles popetue* var. *henryi*, Waukegan, July, 1875; *Buteo borealis* var. *calurus*, near Chicago, April, 1873; *Ardea rufa*, near Cairo, August, 1875.]

NELSON, E. W.—Notes upon birds observed in Southern Illinois, between July 17, and September 4, 1875. <*Bull. Essex Inst.*, IX., 1875, pp. 32-65. [Includes lists of the species observed at the following localities: *Mt. Carmel and vicinity*, July 17—September 4 (pp. 32-46; 113 species); *Fox Prairie, Richland county*, (pp. 47-50; 64 species); *Cairo and vicinity*, August 17-31 (pp. 50-61; 79 species); *vicinity of Anna, Union county* (pp. 61-4; 83 species). Total number of species observed at the four localities, 183. Cf. *Bull. Nutt. Orn. Club*, III., January, 1878, p. 36, for review by J. A. Allen.]

NELSON, E. W.—Birds of Northeastern Illinois. <*Bull. Essex Inst.*, VIII., December, 1876, pp. 90-155. [316 species and 12 additional "races;" 180 species breed (?); 24 occur in summer, but are not known to breed; 69 occur only during migrations; 76 are winter visitants and residents. A list is given of 16 species "not given in the preceding list," but which are known to occur in Illinois, making a total of 332 species, exclusive of geographical races, which are known to occur in the State. Cf. *Bull. Nutt. Orn. Club*, II., July, 1877, pp. 68, 69, for review by W. Brewster.]

JONES, WM. L.—April Birds in Illinois. <*Forest and Stream*, Aug. 3, 1876, p. 418. [Dates of arrival of several species, at Lebanon, St. Clair county.]

1877.

JONES, W. L.—Arrivals of birds [at Lebanon, Illinois.] <*Field and Forest*, III., No. 1, July, 1877, pp. 17, 18.

COALE, H. K.—*Junco oregonus* in Illinois. <*Bull. Nutt. Orn. Club*, II., July, 1877, p. 82. [Near Chicago, October 14, 1875; one specimen.]

A. A." [ALLEN, J. A.]—Birds of Southern Illinois. < *Bull. Nutt. Orn. Club*, III., Jan., 1878, p. 36. [Review of Nelson's C in *Bull. Essex Inst.*, IX., 1876.]

1878.

OGWAY, ROBERT.—Notes on Birds observed at Mt. Carmel, Sou Illinois, in the spring of 1878. < *Bull. Nutt. Orn. Club*, V No. 4, Oct., 1878, pp. 162-166. [Twenty-five species mentione nich two, *Helinaia swainsoni* (?) and *Ibis* (=Guara) *alba* we to the fauna of the State.]

1879.

OGWAY, ROBERT.—On a new species of *Peucea* from Southern s and Central Texas. < *Bull. Nutt. Orn. Club*, October, 1879, 8-222. [*P. illinoensis*, = *P. æstivalis bachmani*.]

1880.

VAY, ROBERT.—On six species of Birds new to the Fauna of with notes on other rare Illinois Birds. < *Bull. Nutt. Orn.*, January, 1880, pp. 30-32. [*Zonotrichia querula*, *Buteo harlani*, *ja*, *Pelecanus fuscus*, *Phalacrocorax mexicanus*, *Stercorarius buf. ongicaudus*), *Coturniculus* (= *Ammodramus*) *lecontei*, *Ammodra lacutus nelsoni*, *Elanoides forficatus*, *Protonotaria citrea*, *Opo. mosa*, *Ibis* (= *Guara*) *alba*, *Larus franklini*.]

Y, ROBERT.—The Northern Waxwing (*Ampelis garrulus*) in Illinois. < *Bull. Nutt. Orn. C*, V., April, 1880. n 110 ecimen shot by Prof. Forb

1881.

HURTER, JULIUS.—The Harlequin Duck and the Glossy and Wood Ibises in Southern Illinois. <*Bull. Nutt. Orn. Club*, VI., April, 1881, p. 124.

1880-85.

NEHRLING, H.—Beiträge zur Ornis des nördlichen Illinois. <*Jour. für Orn.*, (October, 1880, pp. 408-41; April, 1881, pp. 196-203; October, 1881, pp. 405-416; January, 1883, pp. 84-97; July, 1883, pp. 255-257; April, 1885, pp. 142-151. [233 species.]

1883.

STRUMBERG, C. W.—Notes from Galesburg, Ill. <*Ornithologist and Oologist*, Vol. VIII., No. 1, January, 1883, p. 8. [Interesting notes on seven species.]

RIDGWAY, ROBERT.—On Leconte's Bunting (*Coturniculus lecontei*) and other Birds observed in Southeastern Illinois. <*Bull. Nutt. Orn. Club*, VIII., January, 1883, p. 58. [*C. lecontei* found in great abundance on Sugar Creek Prairie, Richland Co., Ill., October 27, 28, 1882. *C. henslowi* was also found, though less abundant, and some specimens of *Peuceea illinoensis* (= *P. æstivalis bachmani*) were seen.]

HANCOCK, JOSEPH L.—Parkman's Wren in Illinois. <*Bull. Nutt. Orn. Club*, Vol. VIII., July, 1883, p. 179. [A specimen captured near Chicago, May 7, 1883. The second record of its occurrence in Illinois.]

COALE, H. K.—The Willow Thrush and Holböhl's Linnet in Illinois. <*Bull. Nutt. Orn. Club*, Vol. VIII., Oct., 1883, p. 239. [A specimen of *Hylocichla* (= *Turdus*) *fuscescens salicicola* shot in Chicago, Sept. 16, 1877, and a specimen of *Ægiothus linaria holboelli*, (= *Acanthis linaria rostrata*) Nov. 2, 1878.]

MUNDT, A. H.—Oological and Ornithological. <*Ornithologist and Oologist*, Vol. VIII., No. 2, Feb., 1883, pp. 9, 10. [Interesting notes on 18 species found breeding at Fairbury (Livingston Co.), Illinois.]

COOKE, W. W.—Mississippi Valley Migration. <*Ornithologist and Oologist*, VIII., No. 12, Dec., 1883, pp. 89-91. [Dates of arrival for the following species, with various remarks, the notes pertaining to several Illinois stations: Olive-backed Thrush, Catbird, Ruby-crowned Kinglet, Golden-crowned Kinglet, Brown Creeper, House Wren, Red-eyed Vireo, White-bellied Swallow, and Scarlet Tanager.]

BIRDS OF ILLINOIS.

1884.

W.—Migration in the Mississippi Valley. <*Ornithologist*, IX., No. 9, September, 1884, pp. 105-108. [Extensive following species: American Robin, Yellow-rumped [Cliff Swallow.] No. 10, October, 1884, pp. 117-118. following: Cape May Warbler, Snow Bunting, Lap- Smith's Longspur, Chestnut-collared Longspur (not McCown's Longspur.)]

—Notes from Peoria, Ill. <*Young Oologist*, Vol. I, 1884, p. 43. [Brief notes on nests of six species.]

V.—Bird Migration in the Mississippi Valley. Winter in Northern Illinois. <*Forest and Stream*, Vol. XXIII., No. 15, pp. 444, 445; No. 24, Jan. 8, 1885, pp. 463, 464. [list of 141 species.]

—A New Bird for Illinois. <*The Auk*, Vol. II., Jan. 1885, p. 110. [*Buteo borealis krideri*, taken at Half Day, Illinois, 1876; the specimen now in the collection of the U. S. Museum.]

1885.

J. E.—[Note announcing capture of a specimen of *Colinus richardsoni* at Rockford, Winnebago Co., Illinois, 1885. Snow-birds and Northern Woodpeckers also mentioned.]



BIRDS OF ILLINOIS.

In the following catalogue are included only those species which undoubtedly occur at the present time, and those of whose former occurrence there exists reliable evidence. In strict accuracy, *Campephilus principalis*, *Conurus carolinensis*, and *Ajaja ajaja* might with propriety be excluded from the regular list and included in a special category. I have decided to retain them, however, for the reason that any doubt which may now exist concerning their present or very recent occurrence can be supported by merely negative evidence, based upon extremely meager data; while my experience relating to other southern species, resulting from a personal, though by no means thorough, exploration of localities more than 100 miles north of Cairo, leads me to expect interesting discoveries (some of them perhaps unanticipated), from careful observations in some of the more secluded portions of the extreme southern counties of the State. It is not at all impossible that in these fastnesses, the above mentioned species may still exist.

The classification and nomenclature followed in the present work are those adopted by the special committee of the American Ornithologists' Union, and used in the official check-list of the Union, now being printed. As to the classification, however, I have reversed the sequence of families and higher groups, preferring to commence, as has been customary, with the Thrushes.

BIRDS OF ILLINOIS.

ANALYSIS OF HIGHER GROUPS.

- nt.
- ot tubular.
- us. If present, not connected with the anterior ones by a
brane.
- without fringed or serrate tomin.
- Anterior toes not webbed, or else legs excessively length-
ened.
- f.¹ Lower part of tibia feathered, or else toes united for
most of their length.
- g.¹ Bill not hooked, or else without cere.
- h.¹ Hall toe, if present, incumbent.
- i.¹ No web between bases of anterior toes.
- j.¹ Toes 3 or 4 anteriorly.
- k.¹ Anterior toes cleft to the base, or
else not united beyond first pha-
lanx.
- l.¹ Secondaries more than 6.
- m.¹ Middle toe considerably
longer than the lateral
ones.
- n.¹ Base of bill without
cere.
- o.¹ Posterior half of
tarsus undivided,
or if divided the
segment distinct

- k.²** Bill not strongly hooked.
 - l.¹** Rectrices rigid, acuminate.....**Picid.**
 - l.²** Rectrices neither rigid nor acuminate.
 - m.¹** Inner hind toe 5-jointed.
 - Coccyges (Trogones).**
 - m.¹** Inner hind toe 2-jointed.
 - Coccyges (Cuculi).**
 - i.²** With webs between bases of anterior toes.
 - j.¹** Gape excessively broad and deeply cleft.
 - Wings greatly elongated.....**Macrochires (Caprimulgi).**
 - j.²** Gape normal. Wings short, concave...
 - Gallinæ (Penelopes).**
 - h.²** Hind toe elevated**Gallinæ (Phasiani).**
- g.²** Bill strongly hooked, with a distinct cere at base.
 - h.¹** Toes 2 in front**Psittaci (exotic species).**
 - h.²** Toes 3 in front, or else outer toe reversible.
 - i.¹** Hind toe incumbent.
 - j.¹** Eyes directed forward. Outer toe reversible**Accipitres (Striges).**
 - j.²** Eyes lateral. Outer toe not reversible (except *Pandion*)**Accipitres (Falcones).**
 - i.²** Hind toe short, elevated...**Accipitres (Sarcorhamphi).**
- f.²** Lower part of tibia not feathered near joint, or else bill lengthened and grooved.
 - g.¹** Hind toe, if present, elevated, or else claws extremely lengthened.
 - h.¹** Whole head feathered, or else size small (length less than 1 foot)**Limicolæ.**
 - h.²** Part of head naked. Size large (more than 3 feet long)...**Paludicolæ (Grues).**
- g.²** Hind toe incumbent, and claws never extremely lengthened.
 - h.¹** Loral and orbital regions fully feathered.....**Paludicolæ (Ralli).**
 - h.²** Loral or orbital regions, or both, naked.
 - i.¹** Inner edge of middle claw pectinated.....**Herodiones (Herodii).**
 - i.²** Inner edge of middle claw not pectinated.
 - j.¹** Sides of maxilla without trace of lateral groove.....**Herodiones (Ciconiæ).**
 - j.²** Sides of maxilla with distinct lateral groove.....**Herodiones (Ibides).**
- e.²** Anterior toes distinctly webbed.
 - f.¹** Legs inserted underneath the equilibrium, the body being horizontal when in standing position.....**Longipennes.**
 - f.²** Legs inserted far backward, the body being more or less erect when in a standing position.....**Pygopodes (Cepphi).**
- d.²** Bill with distinctly fringed or toothed tomia.
 - e.¹** Legs extremely lengthened; bill bent abruptly downward at the middle.....**Odontoglossæ.**
 - e.²** Legs short or but moderately lengthened; bill not bent downwards in middle**Anseres.**
- c.²** Hind toe connected with the inner one by a web.....**Steganopodes.**
- b.²** Nostrils tubular.....**Tubinares.**
- a.²** Rectrices entirely absent.....**Pygopodes (Podicipedes).**



ORDER PASSERES.—THE PASSERINE BIRDS.

CHARACTERS.—Three toes in front and one behind; the latter well-developed and on a level with the rest. Bill without a cere, and never distinctly hooked.* Primaries 9 or 10; secondaries 9; rectrices usually 12, rarely 10 or 14. Wing-coverts arranged in three series or tracts, as follows: (1) a well-defined *lesser-covert* area, the numerous small feathers of which are arranged in several rows, the feathers alternately in more or less squamate fashion; (2) the *middle coverts*, which form a single row, the feathers of which overlap one another with their inner webs, or the reverse of all the other feathers of the wing; (3) the *greater coverts*, which overlap the basal portion of the secondaries, but covering less than the basal half of the latter.

The Order Passeres includes the vast assemblage of so-called "Parching Birds," which comprises by far the larger part of known species. The majority of them are of small size, but there are many exceptions to this rule, the Raven and other large *Corvidæ* being true Passeres.

The Passeres include two rather distinct major groups, which may be distinguished as follows:—

Oscines. Tarsus compressed posteriorly, with comparatively sharp hinder edge; or else, hind claw longer than its digit, and straight.

Clamatores. Tarsus cylindrical, the hind claw shorter than its digit and distinctly arched.

ANALYSIS OF FAMILIES OF PASSERES.

A. Oscines.

- a¹. Posterior half of tarsus compressed, with two lateral plates uniting in a comparatively sharp edge, and for the most part undivided.
- b¹. Primaries obviously 10, or else tip of bill hooked.
 - c¹. Tarsi "booted," i. e. the anterior plates undivided for the greater portion of their length.
 - d¹. With distinct rictal bristles. Rectrices normally developed. Nostril oval
 - e¹. Larger (wing more than 3.00 inches). Young distinctly spotted **Turdids.**
 - e². Smaller (wing less than 3.00 inches). Young not spotted..... **Sylviids (Sylvinae, Regulinae).**
 - d². Without rictal bristles. Rectrices much abbreviated. Nostrils linear..... **Cincloids.**
 - c². Tarsi not bootied, but anterior plates divided for the greater portion of their length into more or less distinct segments, or "scutellæ "
 - d³. Bill strongly hooked **Laniids.**

*An exception to this is found in the Family *Laniidae*, in which the maxilla is conspicuously uncinatè, with a pronounced notch and well developed tooth behind it. All the other characters of this family, however, are distinctly Passerine.

BIRDS OF ILLINOIS.

Bill not strongly hooked

Tarsus longer than middle toe with claw, or the bill elongated, not depressed, narrower at base than length of culmen.

Bill moderately hooked at tipVireonidae

Bill not distinctly hooked at tip

♂¹ Tail-feathers stiff, pointed at tip.....Certhiidae.

♀² Tail-feathers normal.

A¹. Nasal feathers directed forward.

♂¹. Smaller (wing less than 4.00 inches).

♂¹. Bill notched, subulateSylviidae (Polioptilinae).

♂² Bill without notch, more or less conoidParidae

♂². Larger (wing more than 4.00 inches)Corvidae

A² Nasal feathers erect or inclined backward.

♂¹. Bill elongate-conical, culmen straight. First primary minute, not reaching to tip of coverts.

Sturnidae

♂² Bill not conical, culmen more or less curved.

First primary well developed, extending beyond tips of coverts.....Troglodytidae

Tarsus not longer than middle toe with claw Bill short, depressed, width at base exceeding length of gonys.Ampelidae.

Apparently only ♀, the tip of the bill not hooked.

Bill short, very broad at base and deeply cleft, the gape more or less as long as the culmen. Outer primary more than twice as long as the innermostHirundinidae.

Bill strongly formed, but gape never twice as long as culmen, etc.

Outer primary less than twice as long as the innermost

Bill decurved and very acute at tip.....Cerebidae (Certhiola)

Bill not decurved.

Bill not conoid; angle of gonys not forward of the nostril.

♂¹. Tertials elongated, reaching nearly to tip of longest

primary feather. Head short, rounded at base, bill not strongly

FAMILY TURDIDÆ.—THE THRUSHES.

CHARACTERS.—Bill slender, usually distinctly notched, and with distinct rectal bristles. Tarsi booted; i. e., the anterior covering undivided for the greater part of its length. Young, distinctly spotted.

All the North American Turdidæ have the wing more than three inches long, and may thus be readily distinguished from members of the most nearly related family, the Sylviidæ.

The American Turdidæ include two strongly marked sub-families, which may be distinguished as follows:—

Turdinæ. Gonys more than one third as long as the commissure.

Myadestinae Gonys less than one third as long as the commissure.

SUBFAMILY TURDINÆ.—THE TRUE THRUSHES.

ANALYSIS OF GENERA.

- a.¹ Wing less than five times as long as tarsus.
 - b.² First primary not reaching beyond tips of primary coverts. Tail without rufous patch at base.
 - c.¹ Tarsus not longer than middle toe with claw..... *Hesperocichla*.
 - c.² Tarsus decidedly longer than middle toe with claw.
 - d.¹ Second quill shorter than fourth. Tail without white at base.
 - e.¹ Tail less than three times as long as the tarsus..... *Turdus* (*Hylocichla*).
 - e.² Tail more than three times as long as the tarsus..... *Merula*.
 - d.² Second quill not shorter than fourth. Tail white at base..... *Saxicola*.
 - b.² First primary reaching beyond tips of primary coverts. Tail with rufous patch at base..... *Cyanecula*.
 - a.² Wing more than five times as long as the tarsus..... *Sialia*.

Of the above genera, only *Turdus*, *Merula*, and *Sialia* are, so far as known, represented in the Illinois fauna. The typical species of *Turdus* are exclusively Old World, a single one (*T. iliacus* Linn.) occurring accidentally in Greenland. All the American species belong to a very strongly marked subgenus, or perhaps genus, *Hylocichla*, which differs from *Turdus* proper in the much more lengthened tarsus, and other characters.

BIRDS OF ILLINOIS.

GENUS **TURDUS** LINNÆUS.

SUBGENUS **Hylocichla** Baird.

BAIRD. Review Am. B., I., 1864, 12. Type, *Turdus mustelinus* Gmel.

Principal characters of the subgenus *Hylocichla* consist in the lengthened tarsus, proportionally shortened tail, and small bill. The group comprises the small North American "Wood Thrushes," which are closely connected on the one side with *Geothlypis* by their lengthened tarsi, and with *Turdus* by the shape of the bill.

The bill is shorter, more depressed, and broader at the tip than in typical *Turdus*, so much so that the species have frequently been described under *Muscicapa*.

It is not at all improbable that naturalists may ultimately consider the group as of generic rank, as has already been done in some instances.

In their general appearance when seen in the forest, the members of this subgenus differ from those of *Turdus* with the exception of the Wood Thrush, which is much larger and more rich in color than its congeners, and more like them in their general appearance and in their habits. As truly said by a discriminating observer,* their resemblance to one another is so close "that none but experienced observers can distinguish them, though, upon a close examination the

Key to the species of Eastern North America.

COMMON CHARACTERS.—Above plain brown; beneath white, more or less spotted with brown or dusky. *Young*, with the upper parts, including wing-coverts, spotted and streaked with yellowish fulvous.

a¹. Sides distinctly spotted, as well as the breast; culmen, .70 or more, and wing usually more than 4.25.

1. *T. mustalinus*. Above cinnamon-brown, brighter and more rufous on the crown, more olive on the tail; beneath, including the sides, white, the breast and sides marked with roundish or inversely cordate spots of black. Wing 4.10-4.50, tail 3.00-3.30, culmen .70-.75, tarsus 1.20-1.30, middle toe .70-.75.

a². Sides uniform grayish or brownish, without distinct spots; jugulum, etc., more or less tinged with buff. Culmen .60 or less, and wing usually less than 4.25.

b¹. Second primary shorter than fifth, the fourth longest. Tail and upper coverts rufous, in decided contrast with the olive of the back, etc. A distinct buff orbital ring.

2. *T. aonalaschke pallasii*. Jugulum with very large triangular spots of dusky. Wing 3.40-3.90 (3.64), tail 2.55-3.15 (2.82), culmen .50-.60 (.54), tarsus 1.15-1.30 (1.19), middle toe .65-.75 (.70).

b². Second primary much longer than fifth, the third longest. Tail and upper coverts, not noticeably different in color from the other upper parts.

c¹. A distinct buff orbital ring.

3. *T. ustulatus swainsonii*. Above uniform olive, of variable shade, the outer surface of the wings (and sometimes the tail also), very slightly browner, or less olive, than the back. Jugulum bright buff with rather large triangular spots of dusky. Wing 3.80-4.10 (3.96), tail 2.80-3.10 (2.95), culmen .50-.55 (.52), tarsus 1.05-1.18 (1.10), middle toe .65-.72 (.69).

c². No trace of light orbital ring.

4. *T. aliciae*. Very similar to *H. ustulatus swainsonii*, but buff of jugulum, etc., usually very much paler, and buff orbital ring wholly absent, the whole side of the head nearly uniform grayish.

α aliciae. Wing 3.75-4.40 (average 4.07), tail 2.95-3.40 (3.09), culmen .45-.58 (.55), tarsus 1.12-1.30 (1.18), middle toe .60-.75 (.68).

β dicknelli. Wing 3.40-3.80 (average 3.65), tail 2.60-2.70 (2.75), culmen .59-.52 (.51), tarsus 1.10-1.25 (1.13), middle toe .65-.70 (.68). Bill more slender, and colors usually darker.

5. *T. fuscescens*. Above uniform fulvous-brown or tawny, jugulum creamy buff, marked with small cuneate spots or streaks of brown, somewhat darker than the crown. Two races, as follows:

α fuscescens. Above light fulvous-brown, or tawny; jugulum creamy buff with narrow cuneate markings of brown, scarcely darker in tint than the upper parts. Wing 3.75-4.15 (3.90), tail 2.70-3.30 (2.96), culmen .52-.60 (.55), tarsus 1.05-1.25 (1.15), middle toe .65-.72 (.69). (The prevalent eastern form.)

β salicicollis. Above russet-olive, jugulum very pale buff, with cuneate markings of dark brown. Wing 3.80-4.25 (4.02), tail 2.95-3.40 (3.20), culmen .55-.60 (.57), tarsus 1.15-1.28 (1.17), middle toe .65-.75 (.69). (Rare straggler from the Rocky Mountains).

BIRDS OF ILLINOIS.

Turdus mustelinus (Gmel.)

WOOD THRUSH.

Syns.—Bell Thrush; Bell Bird; Wood Robin; Grive des Bois and Jean French).

Gmel. S. N. 1, 1783, 817.—Nutt. Man. 1, 1833, 343.—Aud. Orn. Blog. 1, 1839, 446, pl. 78; B. Am. 111, 1841, 24, pl. 144.—BAIRD, B. N. Am. 1853, 213; Cat. 59, No. 143; Review. 1864, 13.—COUES, Key, 1872, 72; Check List, 1873, No. 6; B. N. W. 1874, 2.—B. B. & R. Hist. N. Am. B. 1, 1874, 7, pl. 1, Fig. 1. *chilias mustelinus* COUES, B. Col. Val. 1878, 23.
mustelinus RIDGW. Proc. U. S. Nat. Mus. 11, 1880, 166; Nom. N. Am. B. 1881, No. 1.
WILS. Am. Orn. 1, 1893, 35, pl. 2, Fig. 1.

United States and British Provinces in summer, breeding throughout. Guatemala, Cuba, and Bermudas.

Bright tawny cinnamon-brown, more rufescent anteriorly, more gray-auriculars streaked white and dusky. Lower parts white, the breast and grayish spots.

Above cinnamon-brown, becoming bright tawny rufous on the neck and somewhat lighter on the cervix; wings less reddish than the back, more olivaceous, and tail decidedly grayish brown. A pure white orbital stripe, more gray immediately in front of the eye; auriculars dusky, with whitish. A white malar stripe, curving upward beneath the auricular portion speckled with dusky. Entire lower parts white, usually with buff on the breast; sides of throat bounded by a stripe of aggregated streaks, jugulum marked with distinct cuneate or deltoid, the with larger, broader, inversely cordate, spots of black; abdomen and throat with very few minute spots, or entirely immaculate. Bill the basal half of the mandible paler; iris dark brown; tarsi and toes 4 10—4 50; tail, 3 00—3 30; culmen, 70—75; tarsus, 1 20—1 30; middle

Although a common species throughout the temperate portions of eastern North America, the Wood Thrush cannot be said to be a well-known bird in the same sense as the Robin, Catbird, or other more familiar species; but to every inhabitant of rural districts his song, at least, is known, since it is of such a character that no one with the slightest appreciation of harmony can fail to be impressed by it.

The song of the Wood Thrush is of a richer, more melodious tone than, perhaps, that of any other North American bird; and, did it possess continuity, would be incomparable. It is one of the few birds which the Mocking-bird cannot imitate—he cannot even approach the liquid metallic melody of the Wood Thrush's tones. Yet, just as the hearer becomes an attentive listener the beautiful notes cease with disappointing abruptness.

The favorite haunts of the Wood Thrush are damp woodlands and shaded dells, but he has on a few occasions been known to take up his abode in wooded parks within large cities. It is not often, however, that he is to be met with away from the wild-wood, where, however, he is by no means shy.

The nest of this species is usually built upon a horizontal branch of a low tree, usually from six to ten—rarely fifteen—feet from the ground. It is a firm, compact structure, with much mud in its composition. The eggs are from three to five, but usually four, in number, and are of a uniform greenish blue color, thus, as does also the nest, closely resembling those of the Robin, except in size, being considerably smaller.

Turdus fuscescens Steph.

WILSON'S THRUSH.

Popular synonyms.—Tawny Thrush; Veery.

Turdus mustelinus WILS. Am. Orn. v. 1812, 98, pl. 43, fig. 3 (nec GMEL.).

Turdus fuscescens STEPH. Shaw's Gen. Zool. x. 1817, 182.—BAIRD, B. N. Am. 1858, 214;

Cat. N. Am. B. 1859, No. 151; Review, 1864, 17.—B. B. & R. Hist. N. Am. B. i. 1874, 9, pl. i, fig. 5.—COUES, Key, 1872, 73; Check List, 1873, No. 6; ed. 2, 1881, No. 7; B. N. W., 1874, 5; B. Col. Val. 1878, 89.

Hylocichla fuscescens RIDGW. Proc. U. S. Nat. iii. 1880, 166; Nom. N. Am., 1881, No. 2.

Turdus wilsoni BONAP. Jour. Phila. Ac. iv. 1824, 34.—AUD. Orn. Biog. ii. 1834, 362, pl. 164; Synop. 1839, 90; B. Am. iii. 1841, 27, pl. 145.

Merula minor SW. & RICH. F. B. A. ii. 1831, 179, pl. 36.

Turdus brunneus BREWER, Jour. Bost. Soc. vi. 1852, 304.

HAB. Eastern United States and British Provinces; wintering in the Southern States and in Cuba, and breeding in the northern portions of its range. (Replaced in the Rocky Mountains by the allied race *T. fuscescens salicicolus*).

BIRDS OF ILLINOIS.

ve uniform, rather light fulvous brown, varying in precise shade; no orbital-ring, the sides of the head being nearly uniform grayish, as in the anterior and posterior portion of throat creamy buff, with cuneate spots of little darker than the color of the crown, these markings narrower and anteriorly; chin and upper part of throat, nearly white, immaculate, but each side by a longitudinal series of brown streaks, sometimes blended below an ill-defined whitish or buffy malar stripe; lores pale grayish, auriculars darker and more brownish. Sides of breast, sides, and wings gray, the sides of the breast sometimes faintly spotted with a frequently uniform, tibia grayish white in front, brown on posterior parts pure white. Bill dusky, the basal half of the mandible paler; tarsal pale brown (in skin), toes darker. Wing 3.75-4.15 (3.95); tail 2.70-3.30 (3.25) (1.15), middle toe .65-.73 (.69), culmen (exposed portion) .52-.60 (.56).^{*} The colors paler, in fall and winter, the brown above brighter, the buff of throat and spots darker.

Female. Above bright reddish-buff, deepest on back and rump; nape, back, and wing-coverts margined with dark brown, confining somewhat indefinitely defined central drop shaped spots. Lores and mandible along sides of throat, dark sooty-brown; throat, sides and wings yellow with indistinct transverse bands of brown, breast deep edged broadly with dull sooty-brown; anal region dirty white. In my collection. Cambridge, Mass., July 23, 1874.* (Brewster, Bul. Nutt. Orn. Club, 18.)

vary a great deal in the precise shade of brown on parts, which, however, is always decidedly more fulvous than in any other species, while there is also much variation in the depth of the buff color and the distinctness of the spots on the jugulum and sides of throat; the latter are occasionally, as in No. 68058, Massachusetts, and 2115,

chusetts these birds are distinguished by the name of Nightingale,—a distinction due rather to the season than to the high quality of their song."

This estimate of the song of the Tawny Thrush is shared by Mr. Chamberlain, who says (l. c.) that "the Veery displays the least musical ability yet his simple strain is exceedingly pleasant to the ear and his beautiful voice exhibits most strongly that peculiar resonant metallic tone which is characteristic of the genus."

The nest is placed on or near the ground, resting on a thick mat of dry leaves, and is without mud in its composition. The eggs are four or five in number, of a bluish green color, usually immaculate, but in very rare cases finely speckled with brown.

Mr. H. K. Coale's notes regarding this species as observed by him in the vicinity of Chicago, are to the effect that it is a rather common migrant, but not often seen, on account of its shyness, and that it is generally found in clearings, in company with Towhee Buntings.

Turdus fuscescens salicicolus Ridgw.

WILLOW THRUSH.

Popular synonyms.—Rocky Mountain Veery.

Turdus fuscescens BAIRD, B. N. Am. 1858, 923, 927 (Ft. Bridger, Wyoming).—ALLEN, Bull. M. O. Z. 111, 1872, 155, 173 (Mts. of Colorado).—RIDGW. Bull. Essex Inst. 1873, 172 (Salt Lake Valley, Utah); Bull. Essex Inst. 1873, 179 (Colorado); *ib.* 1875, 35 (Provo R., Utah); Orn. 40th Paral. 1874, 398 (valleys of Bear, Provo, and Weber R's, Utah; breeding).—HENSCHAW, Ann. Lyc. N. Y. xi, 1874 (Utah); Rep. Wheeler's Exp. 1874, 39, 55, 71 (*do*); Zool. Wheeler's Exp. 1875, 148 (Denver & Ft. Garland, Colorado; breeding).—COUES, B. N. W. 1874, 5 (*part*).

Turdus (Hylocichia) fuscescens COUES, B. Col. Val. 1878, 39 (*part*).

Hylocichia fuscescens salicicola RIDGW. Pr. U. S. Nat. Mus. vol. 4, Apr. 10, 1882, 374.

Turdus fuscescens salicicolus COUES, 2d Key, 1894, 246.

HAB. Rocky Mountain region, west to the Salt Lake Valley; wintering in eastern Mexico (and southward?). Accidental fall straggler to Illinois (Chicago, Sept. 16, 1877, H. K. Coale).

CH.—Similar to *T. fuscescens*, but averaging decidedly larger, the upper parts much less tawny, and the jugulum less distinctly buff. Wing 3.80-4.25 (4.02); tail 2.95-3.40 (3.20); culmen .55-.60 (.57); tarsus 1.15-1.23 (1.17); middle toe .65-.75 (.69).*

Adult in spring: Above uniform russet-olive, (much as in *T. ustulatus*); jugulum and lower part of throat pale buff, as in *ustulatus*, much lighter than in *fuscescens*, the markings, however, small and narrow as in the latter. Sides of head dull grayish, without trace of lighter orbital ring; sides of breast, sides, and flanks ash-gray (rather deeper than in *fuscescens*), the breast very faintly or not at all spotted with darker.

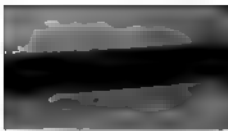
* Extreme and average measurements of 11 adults.

Adult in fall and winter: Above darker, more umber, brown; jugulum and lower part and sides of throat deeper buff, with much darker spots.

The general appearance of this bird at first glance is more that of *T. ustulatus* than true *T. fuscescens*, the upper parts and anterior lower parts being quite similarly colored. A close examination, however, immediately reveals radical differences, the most important of which is the total absence of any light orbital ring, which is always present, and very distinct, in *ustulatus*. The wings and tail, instead of being appreciably more rufescent than the back and rump are, on the other hand, less so; the buff of the jugulum gives way very abruptly to the ash-gray on the sides of the breast, and the spots end quite as abruptly, the breast being plain ash-gray laterally, and white medially, with very indistinct spots of grayish between the white and the gray. In *ustulatus* the sides are decidedly brown, with very distinct transverse spots of a darker shade of the same color entirely across the breast. Another excellent character consists in the color of the axillars and lining of the wing, which are light grayish in the present bird, and deep brownish buff in *ustulatus*.

The differences from typical *fuscescens* of the Atlantic States, as indicated in the above diagnosis, are exceedingly constant.

A specimen from Chicago, Ill., in the collection of H. K. Coale, of that city, (No. 1568, Coll. H. K. C., Sept. 16), is referable to this race, and is evidently a fall straggler from the Rocky Mountain district. It is even more olive above than most specimens from that region, having almost exactly the same shade of color as a fall specimen of *T. swainsonii* from Massachusetts, the latter, however, an unusually brown example. The entire absence of any light or-



This strongly marked race is decidedly distinct from its eastern representative in both habits and song, the latter being far finer.

***Turdus aliciae* Baird.**

GRAY-CHEEKED THRUSH.

Popular synonyms. Alice's Thrush.

- Turdus aliciae* BAIRD, B. N. Am. 1858, 217; ed. 1861, pl. 81, fig. 2; Cat. N. Am. B. 1859, No. 154; Review, 1864, 21.—B. B. & R. Hist. N. Am. B. 1, 1874, II, pl. 1, fig. 3.
Turdus swainsoni var. *aliciae* COUES, Key, 1872, 78; Check List, 1873, No. 5a.
Turdus swainsonii b. *aliciae* COUES B. N. W. 1874, 4; B. Col. Val. 1878, 36.
Turdus ustulatus aliciae COUES, 2nd Check List, 1883, No. 12.
Hylocichla aliciae RIDGW. Proc. U. S. Nat. Mus. III. 1880, 166; Nom. N. Am. B. 1880, No. 3.

HAB. Arctic and subarctic America in summer, from Labrador to Alaska (Pacific coast); passing through the eastern United States during migrations, and wintering in Central America, south to Colombia; eastern Siberia.

SP. CH. Above uniform greenish olive-brown; no trace of light orbital ring. Beneath white usually more or less tinged with buff on the jugulum, the sides uniform olive-gray. Jugulum with lower parts and sides of throat marked with rather small triangular spots of dusky. Wing, 3.85-4.40 (4.18); tail, 2.85-3.25 (3.05); culmen, .50-.58 (.54); tarsus, 1.15-1.25 (1.19); middle toe, .65-.72 (.69).*

Adult in Spring. Above uniform greenish olive-brown, the tail and outer portion of wings sometimes appreciably browner, or less greenish; sides of head nearly uniform dull grayish, the auriculars faintly streaked with white. Malar region and lower parts in general, white, the entire sides uniform olive-gray, and the jugulum usually (but not always) more or less tinged with light buff; jugulum, with lower part and sides of throat, marked with rather small but very distinct deltoid spots of dusky, these markings more euneate anteriorly, and forming a nearly continuous submalar stripe along each side of throat, the extreme posterior spots decidedly transverse; breast marked with transverse spots of olive-gray, like the color of the sides. Bill black, the basal half of the mandible pale colored (dull flesh-color in life); interior of mouth bright yellow; tarsi and toes pale brown or horn-color, the toes usually darker.

Adult in fall and winter. Similar, but usually more greenish olive, and the buff tinge on jugulum more distinct.

Turdus aliciae is apparently a very near ally of *T. fuscescens*, with which it agrees much more closely in measurements and in pattern of coloration, than with *T. ustulatus swainsonii* with which it has usually been compared, and, by many confused, though needlessly so. From the latter it may be invariably distinguished by the entire absence of a light orbital ring, the whole side of the head being nearly uniform grayish, as in *fuscescens*. The spots on the jugulum average decidedly smaller; the jugulum and malar region are much less distinctly buff; the sides much grayer, etc. Some specimens of *aliciae* and *swainsonii* are identical in the color of the upper parts,

*Extreme and average measurements of 38 adults.

but a large majority of the former species are decidedly darker and less brown, appearing on actual comparison almost gray in contrast.

There is the usual range of individual variation in this species, affecting not only the color but the proportions also; but I have been unable to discover any variation with locality, although specimens from the far North, being in midsummer dress, are paler and grayer than specimens from the United States obtained in spring or autumn, and therefore in fresher plumage.

First described in 1858 from specimens obtained at West Northfield, Illinois, by Miss Alice Kennicott, and near Cairo by her brother, the lamented Robert Kennicott, this species remained for several years rare in collections and its distribution comparatively unknown; but at the present time its habits and range are known perhaps as exactly as those of any of its congeners. Everywhere within the United States the typical form is merely a migrant, although a small southern race passes the summer on the higher mountains of the extreme northeastern portions of the country; but of the latter it may be best to treat especially under its appropriate heading. (See *T. alicia bicknelli*, page 59).

The breeding range of the Gray-cheeked Thrush includes a vast extent of territory, from the bleak regions of Labrador to the shores of the Arctic Ocean and westward to the coasts of Behring's Sea, including those of the Asiatic as well as the American side.

In its general habits, this species much resembles its congeners, being, perhaps, most like *T. ustulatus swainsonii*, although its relationship to *T. fuscescens* are in some respects equally close. The

Turdus aliciae bicknelli* (Ridgw.)*BICKNELL'S THRUSH.**

Hylocichla aliciae bicknelli RIDGW. Pr. U. S. Nat. Mus. Vol. 4, Apr. 10, 1882, 377.—BICKNELL, Bull. Nutt. Orn. Club, July, 1882, pp. 152-159 (habits).—BREWSTER, ib. Jan., 1883, pp. 12-17 (critical).

Turdus aliciae bicknelli COOPER, 2d Key, 1884, 248.

HAB. Higher mountains of the northeastern United States, from the Catskills and Adirondacks, in New York, to the White mountains of New Hampshire; breeding from an elevation of 4,000 feet upward. Straggler to Illinois (Warsaw, May 24, 1884; Chas. K. Worthen).

SUBSP. CHAR. Similar to *Turdus aliciae* Baird, but much smaller and (usually) with the bill more slender. Wing, 3.40-3.80 (3.65); tail, 2.60-2.90 (2.75); culmen, .50-.52 (.51); tarsus, 1.10-1.25 (1.13); middle toe, .65-.70 (.68).

The seven specimens upon which this new race is based are uniformly very much smaller than true *T. aliciae*, with slenderer bills, and present also certain slight but rather indefinite peculiarities of coloration. After a very careful comparison, however, I am unable to find any constant color-differences which can be expressed in a diagnosis. Some specimens, notably the two males from Slide Mountain (where Mr. Bicknell found the present bird breeding in company with *T. ustulatus swainsoni* and *T. aonalaschke gillasi*, and having very distinctive habits and notes as compared with the two species in question), have the upper parts much browner than in *aliciae*, with the wings and tail appreciably more reddish. In fact, the general aspect of the upper parts approaches more closely that of *T. ustulatus*, but the shade is much darker and less fulvous, while, as in typical *aliciae*, there is no trace of a lighter orbital ring. The bill is much more slender than in most specimens of the larger form, while in several examples it is of a very peculiar shape, being much depressed basally, with the middle portion of the culmen somewhat concave. In fact, the bill in these specimens is much like that of the Nightingale (*Luscinia philomela*) in shape, but with even a more prominent angle at the base of the gonys, and still more depressed at the base. The extreme form of the bill, in this respect, as exhibited in No. 653 (coll. E. P. B.), suggests very strongly that of a Dipper, or Water Ouzel (*Cinclus*) in miniature.

This newly discovered race, was first obtained on the Catskill Mountains by Mr. Eugene P. Bicknell, to whose kindness I am indebted for the privilege of describing it. Mr. Bicknell found it breeding on Slide Mountain, at an elevation of 4,000 feet, and made careful observations on its habits, which were recorded in the "Nut-tall Bulletin" for July, 1882, pp. 152-159.

A single specimen was obtained at Warsaw, Illinois, on the 24th of May, 1884, by Mr. Chas. K. Worthen, thus considerably extending its known range and adding it to the fauna of this State.

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Turdus ustulatus swainsonii (Cab.)

OLIVE-BACKED THRUSH.

Synonyms.—Swainson's Thrush; Swamp Robin (New England).

swainsonii CABAN. Faun. Per. 1845-46, 187.—HAIRD, B. N. Am. 1868, 216; Cat. N. Am. B. 1, No. 153; Review, 1864, 19.—COUES, Key, 1872, 72; Check List, 1873, No. 5; B. N. Am. B. 1, 1874, 4; B. Col. Val. 1878, 34. B. B. & B., Hist. N. Am. B. 1, 1874, 14, pl. 1, fig. 4. *ustulatus swainsonii* RIDGW. Proc. U. S. Nat. Mus. III, 1880, 166, Nom. N. Am. B. 1, 1881, 4a.

swainsonii COUES, 3d Key, 1884, 248.

Range.—In North America, including the Rocky Mountain district, west to the Great Basin; breeding in the British Provinces and far southward in the United States; wintering in southern Union States,* Central America and South America (Ecuador, Peru, Brazil, etc.).

Color.—Adult. Above uniform olive-brown, more grayish in some examples; orbital ring of buff, supraloral stripe, malar region, chin, throat, and jugulum usually deepest toward sides of head and neck. Jugulum thickly marked with triangular spots of dusky brown (much darker than the color of the back); markings more cuneate anteriorly, and continued along sides of the throat in vertical dashes, usually blended into a more or less continuous subventral border; lower breast and underparts unbroken anteriorly; chin and upper part of throat immaculate; sides, and flanks, olivaceous-gray; rest of lower parts pure white; with distinct transverse spots of deep brownish gray; tibiae light brownish and lining of wing deep grayish fulvous, mixed with ochraceous. Bill black; mandible pale (dull flesh-color in life); interior of mouth rich yellow; throat brown, tarsal and toes pale brownish, the latter darker. Length, 7 7/8 to 8 1/2; wing, 12 25; wing, 3 80-4 10 (3 96); tail, 2 80-3 10 (2 95); culmen, 50-55; middle toe, 65-72 (69).†

Male. Above much darker than adult, each feather, excepting on the throat, with a tear-shaped spot of rich buff, beneath like adult, but rather more spotted on the throat and sides; and with a few white spots on the

A specimen said to be from San Francisco (No. 39468; F. Bischoff) agrees exactly with eastern specimens. There may be an error in the locality, or it may be an accidental straggler.* Three specimens from the Yukon region in Alaska (50146, Kamen-sichta, May 31, W. H. Dall; 73227, Ft. Yukon, June 22, L. M. Turner; and 81106, Anvik, lower Yukon, May or June, E. W. Nelson), are more grayish, like Rocky Mountain examples.

Extralimital specimens are from Tehuantepec, Guatemala, Costa Rica, and Ecuador (55335, Archidona, Rio Napo; Orton). They agree entirely with North American specimens.

The Olive-backed Thrush, or "Swamp Robin" as it is familiarly known in New England, is another of the species which in most parts of the United States where it is found occurs simply as a migrant. It breeds from northern New England north well into the more southern parts of the region inhabited by *T. aliciæ*, both species often breeding in the same localities and yet each retaining its special characteristics of habits and notes—a fact sufficient to at once dispose of any theory of their representing races of one species. In the higher mountains, this species breeds far southward, Wilson having found its nest and eggs on the high lands of northern Georgia, while in the Rocky Mountains of Colorado Mr. Henshaw found it abundant, in May, in the vicinity of Fort Garland.

The song of this species, according to the writer's experience in the mountains of Utah, is simple and brief, but very sweet, though less so than that of either *T. fuscescens salicicolus* or *T. aonalaschkæ*.

Mr. H. K. Coale informs me that several specimens shot in May, 1883, were about a dead cow, where they had probably been attracted by the supply of maggots.

The nest of the Olive-backed Thrush is usually built in bushes or low trees, near or along the banks of streams. Those found by the writer in the mountains of Utah† were in willows overhanging or growing very near to the banks of a mountain brook at heights varying from three to ten, but usually about seven, feet from the ground. In no instance were there more than four eggs in a nest. The composition of the nest of this species (as built in New Brunswick) is thus described by Mr. Chamberlain:‡ "In a specimen of this nest before me coarse grass is the predominating material in

* The "make" of this skin is precisely that of specimens prepared by the same collector at Peoria, Illinois.

† Ornithology of the 40th Parallel, pp. 397, 398.

‡ Canadian Sportsman and Naturalist, Jan., 1883, p. 20.

the external parts, but in the walls twigs of spruce, bits of lichens and dried leaves are mixed with the grass and all are woven into a solid mass, very firm and strong. The lining is formed by a layer of fine grass interwoven with pieces of a black, vine-like root, all neatly laid; over these, at the bottom, is a layer of skeleton leaves. The measurements are: Depth, inside, $1\frac{1}{2}$ inches; width at mouth, $2\frac{1}{4}$ inches; outside, the diameter is irregular, varying from $4\frac{1}{2}$ to 5 inches. Mr. J. W. Banks tells me that of some fifty nests of the Olive-backed Thrush that he has examined all were lined with skeleton leaves; but Mr. Harold Gilbert found one in 1878 that was lined with moose hair. This nest was built in a garden, in the suburbs of St. John, within twenty feet of the house and but an arm's-length from one of the main walks. The moose hair was furnished by a tame animal kept on the grounds."

Turdus aonalaschkæ pallasii (Caban.)

HERMIT THRUSH.

Popular synonyms.—Eastern Hermit Thrush, Rufous-tailed Thrush; Swamp Robin, or Ground Swamp Robin (New England), Solitary Thrush.

Turdus solitarius (not of LINN) WILS. Am. Orn. v. 1812, 96 (not pl. 48, fig. 2, which = *swainsonii*). AUD. Synop. 1839, 91. B. Am. B. 1841, 29, pl. 146.

Merula solitaria SW. & RICH. F. B. A. H. 1831, 184, pl. "35" (= 37).

Turdus minor (not of GM.) NUTT. Man. 1 1832, 346. AUD. Orn. Biog. 1, 1832, 303, pl. 58.

Turdus pallasii CABAN. Wieg. Archiv. 1847, 1, 265. BAIRD B. N. Am. 1858, 212, Cat. N.

Am. B. 1859, No. 149, Review, 1864, 14.—COUES, Key, 1872, 72; Check List, 1873, No. 4;

B. N. W. 1874, 2; B. Col. Val. 1878, 20.—B. B. & R. Hist. N. Am. B. 1, 1874, 18, pl. 1, fig. 6

Turdus aonalaschkæ pallasii, RIDGW. Proc. U. S. Nat. Mus. Vol. III, March 22, 1880, 1
Hylociothla unalasce pallasii RIDGW. Proc. U. S. Nat. Mus. III, 1880, 106. Nom. N. Am. B. 1880, No. 5b.

Turdus unalasce nanus COUES. 3d Check List 1880, No. 10.

Adult in spring and early summer. Above uniform olive-brown, changing to dull cinnamon-rufous on the tail, the upper tail-coverts of an intermediate tint; outer portion of the wings more rusty than the back, but much less rufous than the tail. A very distinct orbital ring of pale buff; auriculars and suborbital region dull grayish brown, indistinctly streaked with paler. Lower parts dull white, purer on the abdomen, the jugulum usually faintly tinged with buff; jugulum marked with large deltoid spots of dark brown or blackish, the more posterior of these spots broader and less pointed, the anterior ones more cuneate; sides of the neck with cuneate streaks of dark brown or blackish, narrower and more linear anteriorly, where they form a well defined stripe or "bridle" along each side of the throat; malar region dull white, indistinctly speckled or streaked with brown; breast with distinct roundish or somewhat saggitate spots of deep grayish brown; sides and flanks light grayish olive-brown, axillars and lining of wing pale dull ochraceous; tibia olive-brown.

Adult in fall and winter. Similar, but above much browner (almost umber on the back), the tail deeper rufous, the jugulum more distinctly tinged with buff, and the sides browner olive.

"First plumage: female. Remiges and rectrices as in adult, but darker and duller; rump and tail-coverts bright rusty-yellow; rest of upper parts, including wing-coverts dark reddish brown, each feather with a central tear-shaped spot of golden-yellow; entire under parts rich buff, fading to soiled white on abdomen and anal region; each feather on jugulum and breast broadly tipped with dull black, so broadly, indeed, that this color covers nearly four-fifths of the parts where it occurs; rest of under parts, with exception of abdomen and crissum, which with the central region of the throat are immaculate, crossed transversely with lines of dull black. From a specimen in my collection shot at Upton, Me., June 20, 1873. This bird was very young,—scarcely able to fly, in fact,—yet the color of the rectrices is sufficiently characteristic to separate it at once from the corresponding stage of *T. swainsoni*, which it otherwise closely resembles. Another specimen of apparently nearly the same age, taken at Rye Beach, N. H., July 25, 1872, differs in having a decided reddish or rusty wash over the entire plumage, and by the spots on the breast being brownish instead of black." (BREWSTER, Bull. Nutt. Orn. Club, Jan., 1873, p. 17.)

Specimens vary a good deal in the precise shade of color on the upper parts, the relative blackness of the spots on the jugulum, the distinctness of the buff tinge to the latter region, and other minor details. In the spring or early summer plumage the color of the back is much that of *T. ustulatus swainsonii*, but is browner, or with less of an olive cast. In winter the back and crown are sometimes decidedly reddish brown, some specimens, (as Nos. 7591, Washington. D. C. and 54823, Enterprise, Florida, Feb. 1), being in fact even more rufescent than the Rocky Mountain form of *T. fuscescens*. The spots on the jugulum vary in form from decidedly cuneate to broadly deltoid, and in color from dark grayish brown to black.

An excellent treatise on the several geographical races of this species by Mr. H. W. Henshaw may be found in the "Nuttall Bulletin," for July, 1879, pp. 134-139.

The Hermit Thrush is a species of more general distribution than any other of the small thrushes, being found entirely across the continent and north to the arctic regions. It is not quite the same bird, however, in all parts of its range, the Rocky Mountain region

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ed by a larger, grayer, race, while in the Pacific coast
arf race takes its place. These two geographical forms
ntly distinct to rank as subspecies they need not be
rther here.

nd Swamp Robin," as this species is known in parts of
in contradistinction from its relative, the Olive-backed
alled "Swamp Robin") breeds from Massachusetts north-
ses the winter from the Middle States, or from about the
to the Gulf coast. It has been found common in winter in
ashington, D. C., during the severest weather, the mercury
6°. Most of the habits of this species are very similar to
ongeners. Its song is said by Dr. Brewer to be "very
many of the characteristics of that of the Wood Thrush.
has the same tinkling sounds, as of a bell, but is
verful nor so prolonged, and rises more rapidly in its
It begins with low, sweet notes, and ends abruptly
st, sharp ringing notes."

GENUS **Merula** LEACH.

Syst. Cat. Mamm. and Birds, 1816, p. 20. Type, *Turdus merula* Linn.

nt about four-fifths as long as the wing, and more than three times as
greater than the tarsus little larger than the middle toe, extending

Merula migratoria (Linn.)

AMERICAN ROBIN.

Popular synonyms—Robin; Robin Red-breast; Migratory Thrush; Robin Thrush; Red-breasted Thrush; American or Carolina Fieldfare.

Turdus migratorius LINN. S. N. 1, 1766, 292.—WILSON, Am. Orn. 1, 1808, 35, pl. 2, fig. 2.—NUTT. Man. 1, 1832, 338.—AUD. Orn. Biog. ii, 1834, 190, v. 1839, 442, pl. 131; Synop. 1839, 89; B. Am. iii, 1841, 14, pl. 142.—BAIRD, B. N. Am. 1858, 218; Cat. N. Am. B. 1859, No. 155; Review, 1864, 28.—COUES, Key, 1872, 71; Check List, 1873, No. 1; 2d ed. 1882, No. 1; B. N. W. 1874, 1, 228; B. Col. Val. 1878, 8.—B. B. & R. Hist. N. Am. B. i, 1874, 25, pl. 2, fig. 3.

Merula migratoria SW. & RICH. F. B. A. ii, 1831, 176.—RIDGW. Nom. N. Am. B. 1881, No. 7.

HAB. Breeding throughout northern and eastern North America, but more sparingly in the Southern States. Replaced in the western United States and high table-lands of Mexico by the allied race *M. migratoria propinqua*.

SP. CH. *Adult in summer:* Head deep black, with the lower eyelid, part of the upper eyelid, and a supra-loral streak, pure white; chin pure white, the throat streaked with the same. Upper parts grayish slate-color, the scapulars and interscapulars showing darker centers, these usually most conspicuous anteriorly; wing-coverts also darker centrally but this mostly concealed; primaries, primary-coverts, and alulae, black, narrowly but distinctly edged with ash-gray. Tail uniform slate-black, the two outer feathers with inner webs distinctly tipped with white. Jugulum, breast, entire sides, upper part of abdomen, axillars, and lining of the wing, uniform deep rufous or reddish ochraceous (varying much in shade in different individuals); posterior part of abdomen and femoral region pure white; anal region and crissum white, mixed with plumbeous, this mostly beneath the surface. Bill, bright yellow, tipped with dusky; iris brown; tarsi and toes brownish black or dark horn-color—sometimes deep black. Total length 10–11; extent 15.50–17.; wing, 8.10–5.40; tail, 4.10–4.50; culmen, .85–.92; tarsus, 1.30–1.40; middle toe, .82–.95.*

Adult in summer: Usually a little paler and duller in color than the male, but not always distinguishable. Bill less purely yellow; dimensions about the same.

Adult in winter: Upper parts decidedly tinged with olive; rufous feathers of the lower parts distinctly bordered with white, producing a scaly appearance. Bill mostly blackish, the yellow confined chiefly to the lower mandible.

Young in first winter: Differing from the autumnal or winter adult in much paler colors; head grayish, the pileum scarcely or not at all darker than the back, the upper parts being uniform dull gray; breast, etc., reddish ochraceous, much mixed with white posteriorly, the jugulum tinged with ashy. A more or less distinct supra-auricular streak of white.

Young in first plumage: Pileum and side of head dull blackish, with an indistinct dull whitish superciliary streak between; the lower eyelid also whitish. Upper parts dull brownish gray, the scapulars and interscapulars variegated with blackish terminal bars and whitish shaft-streaks; lesser and middle wing-coverts also marked with pale shaft-streaks. A whitish malar-stripe, bordered below by a blackish stripe along each side of throat; chin and throat white, immaculate, or with only very faint scattered specks. Breast, sides and abdomen, pale rufous or ochraceous, thickly spotted with black; lining of wings uniform ochraceous or pale rufous; posterior lower parts chiefly whitish.

*Extreme measurement of 9 adult males.

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large series of specimens, such as that contained in the National Museum, there is of course, a very considerable individual variation, but the extremes of normal variation fall within the general terms of the above diagnoses. The first specimen in the series is an adult male obtained at Maryland, April 3, 1879, (No. 82,539; H. Marshall). In this the feathers are all black, but distinctly bordered with slate-gray. The feathers are decidedly black centrally, this showing most conspicuously on the tertials, while the primaries, with their alulae are deep slate-black, narrowly, but very sharply bordered with pale gray. The black of the head is very intense, while the streaks on the throat, are much broader than the white streaks on the breast. The lower parts are of a very rich, bright, uniform rufous. The fresh specimen, was a pure, rich, golden-yellow, the extreme tip black. This specimen I do not consider to be abnormal in the respects indicated, however, but believe it represents merely the most perfect plumage of the fully

A colored individual is a female from the District of Columbia, October 15 (No. 59,304; D. W. Prentiss), and in the plumage above as that of the young in first autumn. The

and his absence would create a void in the ranks of our birds, which would be felt by every one who cherishes memories of his boyhood days.

GENUS *SIALIA* SWAINSON.

Sialia SWAINSON, Zool. Jour. III, Sept. 1837, 173. Type, *Motacilla sialis* LINN.

GEN. CHAR. Bill short, stout, broader than high at the base, then compressed; slightly notched at tip. Rictus with short bristles. Tarsi not longer than the middle toe. Claws considerably curved. Wings much longer than the tail; the first primary spurious, not one fourth the longest. Tail moderate; slightly forked. Eggs plain blue. Nest in holes.

"The species of this genus are all well marked, and adult males are easily distinguishable. In all, blue forms a prominent feature. Three well-marked species are known, with a fourth less distinct. The females are duller in color than the males. The young are spotted and streaked with white." (*Hist. N. Am. B.*)

COMMON CHARACTERS. Adult male bright blue above, beneath cinnamon and white (*S. sialis*), blue and chestnut (*S. mexicana*), or blue and white (*S. arctica*); adult female with the blue above confined to the wings, rump, and tail, the upper parts being grayish, the lower parts paler and duller than in the male (in *S. arctica*, breast, etc., grayish drab). Young, with the grayish or dusky upper parts spotted or streaked with whitish, and the whitish lower parts squamately spotted with dusky.

♂. Breast and sides chestnut or cinnamon.

1. *S. sialis*. Throat cinnamon, like the breast; belly white; upper parts cobalt-blue.

Hab. Eastern North America.

2. *S. mexicana*. Throat deep blue; belly grayish blue; upper parts rich smalt-blue, the back usually with a chestnut patch. Hab. Western U. S., chiefly in the valleys.

♂. Breast and sides turquoise-blue.

3. *S. arctica*. Upper parts rich azure-blue; belly white. Hab. Western U. S., chiefly on the higher mountains, and northward to the interior of British America.

The three known species of this genus are included in the above synopsis for the reason that two of them have already been recorded as occurring in the State, while the third (*S. mexicana*) is said to have been taken in Iowa, and may therefore possibly, like other western species, occasionally straggle to Illinois.

The females of the three species differ from one another in much the same characters as those which distinguish the males, though the colors being much duller the differences are far less striking.

Sialia sialis (Linn.)

BLUEBIRD.

Popular synonym.—Eastern Bluebird.

Motacilla sialis LINN. S. N. ed. 10, l. 1758, 187; ed. 12, l. 1766, 336.

Sylvia sialis LATH. Ind. Orn. II. 1790, 522.—WILS. Am. Orn. I. 1808, 56, pl. 3, fig. 3.

Ampelis sialis NUTT. Man. I. 1832, 444.

Sialia sialis HALDEM. Trego's Geog. Penn. 1843, 77.—BAIRD, B. N. Am. 1858, 232; Cat. N.

Am. B. 1859, No. 158, Review, 1864, 62.—COOPER, Key, 1872, 76; Check List, 1873, No. 16;

2d ed. 1882, No. 27; B. N. W. 1874, 13; B. Col. Val. 1878, 77.—B. B. & S. Hist. N. Am. B.

I. 1874, 62, pl. 5, fig. 3.—RIDGWAY, Nom. N. Am. B. 1881, No. 22.

Sialia wilsonii SWAINS. Zool. Jour III 1827, 173.—SW & RICH. F. B. A. II. 1831, 210.

HAB. Eastern North America, west to the eastern base of the Rocky Mountains, north to British Provinces. Breeds throughout its normal range, and winters in most portions of the eastern U. S. Resident in Bermuda.

"SP. CHAR. Entire upper parts, including wings and tail, continuous and uniform azure-blue; the cheeks of a duller tint of the same. Beneath reddish brown; the abdomen, anal region, and under tail-coverts white. Bill and feet black. Shafts of the quills and tail feathers black. Length, 6.75; wing, 4.00; tail, 2.90.

"YOUNG. Males of the year dull brown on head, back, and lesser coverts; streaked, except on head, with white. Throat and fore part of breast streaked with white. Tertials edged with brown. Rest of coloration somewhat like adult."

So well known are the habits of the common, familiar Bluebird, that little need be said here on the subject. Partially migratory almost everywhere, it may be occasionally seen in winter even in the most northern States, but probably nowhere north of the parallel of 40° can it be looked for with any certainty at this season of the year. Few birds in the whole world possess as many attractive features as the Bluebird. With the confiding familiarity of the European Robin, *Erithacus rubecula*, it is adorned with

Sialia arctica* (Swains.)*MOUNTAIN BLUEBIRD.**

Popular synonyms.—Arctic Bluebird; Rocky Mountain Bluebird.

Erythaca (Sialia) arctica Sw. & Rich. F. B. A. II, 1831, 209, pl. 39.

Sialia arctica Nutt. Man. II, 1834, 573; ed. 2, I, 1840, 514.—Aud. Synop. 1839, 84; B. Am. II, 1841, 176, pl. 136.—Baird, B. N. Am., 1858, 224; Cat. N. Am. B. 1859, No. 160; Review, 1864, 64.—Cov. Key, 1872, 76; Check List, 1873, No. 18; 2d ed. 1882, No. 29; B. N. W. 1874, 14; B. Col. Val. 1878, 82.—B. B. & R. Hist. N. A. B. I, 1874, 67, pl. 5, fig. 4.—Ridgw. Nom. N. Am. B. 1881, No. 24.

Sylvia arctica Aud. Orn. Biog. v, 1839, 38, pl. 393.

HAB. Western mountain districts of North America, north to lat. 64½°, south nearly, or quite, to the Mexican boundary, at high elevations.

"SP. CHAR. Greenish azure-blue above and below, brightest above; the belly and under tail-coverts white; the latter tinged with blue at the ends. Female showing blue only on the rump, wings, and tail; a white ring round the eye; the lores and sometimes a narrow front whitish; elsewhere replaced by brown. Length, 6.25; wing, 4.36; tail, 3.00. '1875.)

"Young. Male birds are streaked with white, as in *S. sialis*, on the characteristic ground of the adult.

"As already stated, the blue of this species is greener than in *sialis*. The females are distinguished from those of the other species by the greener blue, entire absence of rufous, and longer wings.

"In autumn and winter the blue of the male is much soiled by umber-brown edges to the feathers, this most conspicuous on the breast, where the blue is sometimes almost concealed; the plumage of the female, too, at this season is different from that of spring, the anterior lower parts being soft isabella-color, much less grayish than in spring." (*Hist. N. Am. B.*)

The only claim of this species to a place in the Illinois fauna rests on the single record, by Mr. Nelson (*Pr. Essex Inst.* viii. 1876, p. 95) of the capture of a specimen opposite Dubuque, Iowa.

The home of the Arctic or Rocky Mountain Bluebird is the mountainous region of western North America, especially the ranges of the interior, and thence northward through the more elevated portions of British America to a high latitude. As the Californian Bluebird (*S. mexicana*) is essentially a bird of the lower valleys, so is the present species emphatically a bird of the mountains, its visits to the lower portions of the country being mainly during winter.

SUBFAMILY MYADESTINÆ.—THE SOLITAIRES.

The birds of this subfamily have usually been placed with the Ampelidæ, in a group including also the genera *Phainopepla* and

Ptilogonys. Its true relationship, however, is decidedly with the *Turdidæ*, to which its booted tarsi, its halata, the spotted plumage of its young, and many other characters ally it closely.

The only North American genus is the following:

GENUS MYADESTES SWAINSON.

Myadestes SWAINSON, Jard. Nat. Library, xiii., Flycatchers, "1838," 132. Type, *M. genibarbis* Sw.

"GEN. CHAR. Occipital feathers full and soft. Plumage rather loose. Bill weak, much depressed. Commissure nearly straight. Hind toe longer than inner lateral. Tarsus deeply cleft. Closed wing externally with an exposed light band across the base of the quills, and another nearer the end, separated by a darker one. Tail somewhat graduated on the sides.

"Of the ten or more described species of the genus, only one belongs to the limits of the United States, although several others occupy adjacent territory in Mexico. Several are peculiar to islands of the West Indies." (*Hist. N. Am. B.*)

Myadestes townsendi (Aud.)

TOWNSEND'S SOLITAIRE.

Popular synonyms.—Townsend's Flycatcher, or Flycatching Thrush; Townsend's *Ptilogonys*.

Ptilogonys townsendi AUD. Orn. Biog. v, 1839, 206, pl. 419, fig. 2; Synop. 1839, 46; B. Am. 1. 1840, 243, pl. 69. NUTT. Man. 2d ed. I, 1840, 361.

Myadestes townsendi CASAN, Wieg. Archiv. 1847, I., 208. BAIRD, B. N. Am. 1858, 321; Cat. N. Am. B. 1859, No. 235; Review, 1866, 439.—COUES, Key, 1872, 117; Check List, 1873, No. 121; 2d ed. 1883, No. 169; B. N. W. 1874, 93; B. Col. Val. 1878, 44.—B. B. & B.

Illinois is far from the normal habitat of this interesting bird, whose true home is the mountainous regions of the Far West. A single specimen, however, was shot at Waukegan, by Mr. Charles Douglas, on the 16th of December, 1875. Mr. Nelson informs us that it was "found in a sheltered ravine, extending a short distance into the bluff, bordering the lake shore near the above-named place, and showed no alarm when approached. Nothing peculiar was observed concerning its habits except that its movements were very sprightly." Mr. Douglas has recently written me that it was eating the seeds of the common black thorn-apple (*Crataegus tomentosa*), and that it was quite silent.

Townsend's Solitaire is, from all accounts, a charming songster—the finest, perhaps, among North American birds. Dr. Newberry describes its song as clear, full and melodious, and, although not greatly varied, the notes are all particularly clear and sweet, with strains of pure gushing melody that were both spontaneous and inspiring. Dr. Cooper says that its song can be compared with nothing uttered by any other bird he has ever heard in the United States; and that it excels that of the Mockingbird in sweetness, while it is entirely original. Mr. J. K. Lord, who heard them singing in November, at Fort Colville, Washington Terr., describes their song, as heard on that occasion, as resembling that of the Song Thrush (*Turdus musicus*) of Europe.

FAMILY SYLVIIDÆ.—THE WARBLERS.

CHARACTERS. There is very little by which to distinguish the birds of this Family from the Turdidæ, beyond the very much smaller size and the unspotted plumage of the young. Of the so-called subfamilies here recognized, the *Poliophtilinae* are without much question out of place, though it is very uncertain where they do belong. For the convenience of the student, however, we place them here in accordance with the arrangement adopted by the American Ornithologists' Union.

The so-called subfamilies may be distinguished as follows:

- a.¹ Wings longer than the nearly even or emarginate tail. Anterior tarsal envelope continuous for the greater part of its extent. No white on tail.
 - b.¹ Nostrils exposed. Scutellæ distinct on inner side of tarsusSylvinae
 - b.² Nostrils concealed by feathers. Tarsal envelope without appreciable scutellæRegulinae
- a.² Wings not longer than the graduated tail. Anterior tarsal envelope distinctly scutellate. Tail with white terminal spots and edgingsPoliophtilinae

SUBFAMILY POLIOPTILINÆ.—THE GNATCATCHERS.

GENUS POLIOPTILA SCLATER.

Polioptila cærulea* (Linn.)*BLUE-GRAY GNATCATCHER.**

Popular synonyms.—Blue Wren; Long-tailed Blue Wren; Eastern Gnatcatcher.

Motacilla cærulea LINN. S. N. ed. 12, 1, 1766, 337.

Sylvania cærulea NUTT. Man. 2d ed. 1, 1840, 337.

Culicivora cærulea AUD. B. Am. 1, 1840, 244, pl. 70.

Polioptila cærulea SCL. P. Z. S. 1855, 11.—BAIRD, B. N. Am. 1858, 380; Cat. N. Am. B. 1859, No. 232; Review, 1864, 74.—COUES, Key, 1872; Check List, 1873, No. 23; 2d ed. 1882, No. 36; B. N. W. 1874, 17; B. Col. Val. 1878, 101.—B. B. & B. Hist. N. A. B. 1, 1874, 78, pl. 6, fig. 5.—RIDGW. Nom. N. Am. B., 1881, No. 27.

HAB. United States, chiefly south of 40°; wintering in extreme southern States, Cuba, Mexico, and Guatemala.

"SP. CHAR. Above grayish blue, gradually becoming bright blue on the crown. A narrow frontal band of black extending backwards over the eye. Under parts and lores bluish white tinged with lead-color on the sides. First and second tail feathers white except at the extreme base, which is black, the color extending obliquely forward on the inner web; third and fourth black, with white tip, very slight on the latter; fifth and sixth entirely black. Upper tail-coverts blackish plumbeous. Quills edged externally with pale bluish gray, which is much broader and nearly white on the tertials. Female without any black on the head. Length, 4.30; wing, 2.15; tail, 2.25. (Skin.)" (*Hist. N. Am. B.*)

This active little bird inhabits chiefly open high woods, often along streams, where he may be seen skipping and darting about among the topmost branches, his long tail elevated and jerking in wren-like fashion,—always moving about and ever uttering his wheezy, squeaky notes. During the breeding season the male has a very varied song of considerable power but lacking in sweetness, and uttered in an erratic manner, portions of it suggesting a weak imitation of the Catbird's medley.

The nest of this species is one of the gems of bird architecture. It is a very compact mass of soft felted materials, elaborately and artistically ornamented on the outside with gray and glaucous lichens, the deep interior cavity cosily lined with softest down and feathers. The shape varies from that of a deep cup to that of an inverted cone, the opening being always at the top. This elegant structure is securely fastened—either saddled to or woven about—a horizontal limb, usually near the top of a tree, but, especially if the tree be a very tall one, sometimes on one of the lower branches. Often it is attached to a limb of nearly the same diameter as itself, thus appearing as a knot or other excrescence.

This species is one of the earliest to arrive in spring, making its appearance at Mt. Carmel early in April, the 2nd and 10th of that month being the earliest and latest dates recorded by the writer. In Cook county, Mr. Coale says that it is a "rather common migrant," but that it was really common only in the spring of 1875, when several were shot in Hyde Park. He had not found it breeding, however, though it was found doing so by Mr. G. F. Chapman at Whiting Station, Indiana, near the Illinois line. At St. Louis, Mr. Coale found it very common and nesting on May 22, 1893.

SUBFAMILY REGULINÆ—THE KINGLETS.

GENUS *REGULUS* CUVIER.

Regulus CUV. Leçons d'Anat. Comp. 1799-1800, tald. II. Type, *Monticola regulus* LINN.

Corthylio Cuv. Jour. Orn. 1, 1853, 83. Type, *Monticola calendula* LINN.

"GEN. CHAR. Bill slender, much shorter than the head depressed at base, but becoming rapidly compressed; moderately notched at tip. Culmen straight to near the tip, then gently curved. Commissure straight, gonys convex. Nostrils well provided with bristles, nostrils covered by a single bristly feather directed forwards (not distinct in *calendula*). Tarsi elongated, exceeding considerably the middle toe, and without acutella. Lateral toes about equal, hind toe with the claw longer than the middle one by about half the claw. Claws all much curved. First primary about one third as long as the longest, second equal to fifth or sixth. Tail shorter than the wings, moderately forked, the feathers acuminate. Colors olive-green above, whitish beneath. Size very small." (*Hist. N. Am. B.*)

COMMON CHARACTERS. Above olive-greenish, brighter on rump and edges of secondaries and rectrices, secondaries with a broad black basal bar. Beneath dull whitish. Male with a brightly colored crown-patch of red, orange, or yellow, with black stripes in some species in which the female has a yellow crown-patch. Young and adult female

the Schuylkill River, in Pennsylvania, by Audubon, and is at present known only by the description and illustration given in the works of its discoverer. It is one of several species belonging to the same category, among which may be mentioned the Carbonated Warbler (*Perissoglossa carbonata*), Small-headed Flycatcher (*Sylvania microcephala*), Blue Mountain Warbler (*Dendroica montana*), etc. But since two other species (*Centonyx bairdii* and *Coturniculus lecontei*) until within a few years past included in the same list are now well-known birds, it is quite possible that a few years hence, when the number of intelligent observers has increased, we may know more of Cuvier's Kinglet.

Regulus satrapa Licht.

GOLDEN-CROWNED KINGLET.

Popular synonyms.—Golden-crested Kinglet; Golden-crowned Wren; American Golden-crowned Wren, or Kinglet; American Golden-crest.

Sylvia regulus WILS. Am. Orn. 1. 1808, 128, pl. 8, fig. 2 (not of Linn.)

Regulus cristatus NUTT. Man. 1. 1832, 426.—AUD. Orn. Biog. 11. 1834, 476, pl. 185 (not of Koch).

Regulus satrapa LICHT. VERZ. Doubl. 1825, No. 410.—AUD. Synop. 1839, 82; B. Am. 11. 1841, 165, pl. 132. BAIRD, B. N. Am. 1858, 227; Cat. N. Am. B. 1859, No. 162; Review, 1864, 65.—COUES, Key, 1873, 78; Check List, 1873, No. 22; 2d ed. 1882, No. 34. B. N. W. 1874, 16; B. Col. Vol. 1878, 96.—B. B. & R. Hist. N. A. B. 1. 1874, 73, pl. 5, fig. 8.—RIDG. Nom. N. Am. B. 1881, No. 33.

HAB. Whole of North America, breeding mostly northward of and wintering chiefly within the United States; in winter extending also far into Mexico, on the elevated tablelands.

SP. CHAR. Above olive-green, brightest on the outer edges of the wing and tail feathers, and tinged with brownish gray towards the head. Forehead, a line over the eye and a space beneath it, white. Exterior of the crown before and laterally black, embracing a central patch of orange-red, encircled by gamboge yellow. A dusky space around the eye. Wing-coverts with two yellowish-white bands, the posterior covering a similar band on the quills, succeeded by a broad dusky one. Under parts dull whitish. Length under four inches; wing, 2.25; tail, 1.80. *Female* without the orange-red central patch. Young birds without the colored crown." (*Hist. N. Am. B.*)

"First plumage: female. Pileum (including forehead) dark smoky-brown; line over the eye entirely cut off at its anterior corner by the junction of the dusky lores with the brown of the forehead; tertiaries broadly tipped with white; breast strongly washed with pale fawn-color; otherwise like adult. From a specimen in my collection taken at Upton, Me., August 25, 1874. A young male taken August 25, 1873, is in every way similar. A good series of specimens of various ages shot during August and the early part of September illustrate well the transitional stages. First the brown of the pileum darkens into two black stripes, while the line over the eye broadens to meet its external margin. Next, two lines of yellow feathers appear inside and parallel with the black ones, while the orange of the central space (of the male) is produced last." (BREWSTER, Bull. Nutt. Orn. Club, June, 1878, 19.)

The delicate little Golden-crowned Kinglet—smaller even than the Ruby-crown—is known in Illinois, and indeed in all portions of the United States, except the northern coniferous woods and similar forests of the higher mountains, only as a winter visitant or resident. He is most often seen during clear frosty mornings in mid-winter, and seems particularly in his element when the trees are decked with an icy covering of sleet—when the woods appear like fairy land, and the pure crisp air instills fresh vigor to those who avail forth to enjoy its exhilarating influence. Then the little Gold-crests may be seen in woods or parks in scattered troops, nimbly hunting among the crystal branches, now hanging in Titmouse fashion, then dropping to another limb, and carelessly hopping about, apparently not feeling the contact of the ice with their tiny feet. At such times none of our birds are tamer than these dainty little creatures and none certainly more lovely. They come about the intruder as if utterly unmindful of his presence, often so near that the sparkle of the little black eye, the flash of the glowing orange crown, and every detail of his pretty plumage can be plainly seen.

In its northern summer home, the Gold-crest is said to have an agreeable though delicate song, far inferior, however, to that of the Ruby-crown. In winter, its usual note is a delicate wiry chirp, impossible to express in writing, but nearly if not quite undistinguishable from the ordinary note of the Brown Creeper.

According to Mr. Coale, it is a "very common migrant" in Cook county. "Ever active and uttering a *te-tze, tze-tze* as they fly into every nook and corner of the foliage of trees."

"SP. CHAR. Above dark greenish-olive, passing into bright olive green on the rump and outer edges of the wings and tail. The under parts are grayish white tinged with pale olive yellow, especially behind. A ring round the eye, two bands on the wing-coverts, and the exterior of the inner tertials white. *Male*. Crown with a large concealed patch of scarlet feathers, which are white at the base. *Female* and *young* without the red on the crown. Length, 4.50, wing, 2.33; tail, 1.85.

"This species of *Regulus* appears to lack the small feather which in *satrapa* overlies and conceals the nostrils, which was probably the reason with Cabanis and Blyth for placing it in a different genus. There is no other very apparent difference of form, however, although this furnishes a good character for distinguishing between young specimens of the two species. (*Hist. N. Am. B.*)

The diminutive Ruby-crowned Kinglet is scarcely known in the United States except as a transient visitor in spring and fall, making himself more conspicuous in the former season, when the fruit-trees are decked with blossoms, among which he may be seen engaged in the occupation of snatching from the half opened buds and the unfolding leaves the minute insects which constitute his food. His summer home is among the northern coniferous forests, and he winters in the milder regions of the more southern States.

The song of this bird is comparatively powerful for so small a creature, and is remarkable for its softness and sweet expression. It consists of an inexpressibly delicate and musical warble, astonishingly protracted at times, and most beautifully varied by softly rising and falling cadences, and the most tender whistlings imaginable. Dr. Brewer says that its notes are "clear, resonant, and high, and constitute a prolonged series, varying from the lowest tones to the highest, and terminating with the latter. It may be heard at quite a distance, and in some respects bears more resemblance to the song of the English Sky-lark than to that of the Canary, to which Mr. Audubon compares it." We have never heard the Sky-lark sing; but there is certainly no resemblance between the notes of the Ruby-crowned Wren and those of the Canary, the latter being as much inferior in tenderness and softness as they are superior in volume.

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PARIDÆ.—THE TITMICE AND NUTHATCHES.

Bill more or less conical, without notch, the nasal
 directed forward and usually concealing the nostrils. Size
 less than four inches long). Tarsi distinctly scutellate.
 characters are drawn up to include *Chamaea*, whose
 place in the Family Paridæ is a matter of serious doubt.
 appearing so very distinct from the typical *Paridae*
 connected through Palearctic forms of the latter
 (as of Japan) that there can be no doubt of its belong-
 ing to the same family.

American subfamilies, including *Chamaea*, may be de-
 scribed as follows:—

Bill shorter than head. Tail about as long as the wing, or	
Hallux shorter than middle toe.	
Bill concealed by feathers. Tarsus with anterior covering scu-	
rrated on outer side	Parinae.
Bill exposed. Tarsus with anterior covering fused on outer side	Chamaeinae.
Bill as long as the head. Tail much shorter than the wing. Hallux	
equal to middle toe	Sittinae.

SUBFAMILY PARINÆ.—The Titmice.

This subgenus scarcely differs from *Parus* except in the possession of a well developed pointed crest. But one species occurs east of the Rocky Mountains, except in Texas, where a Mexican species, *P. atricristatus* is found. In Western Texas to Arizona occurs another Mexican species, *P. wollweberi*, while in California and other parts of the Western Province *P. inornatus* is found.

Parus bicolor Linn.

TUFTED TITMOUSE.

Popular synonyms.—Black-fronted Titmouse.

Parus bicolor LINN. S. N. ed. 12, 1, 1766, 340.—WILS. Am. Orn. 1. 1806, 137, pl. 8, fig. 5.—AUD. Orn. Biog. 1, 1831, 199, pl. 39; Synop. 1839, 73; B. Am. H. 1841, 143, pl. 125.—NUTT. Man. 1, 1832, 286.

Lophophanes bicolor BONAP. Consp. 1, 1850, 228.—BAIRD, B. N. Am. 1858, 384; Cat. N. Am. B. 1859, No. 285; Review, 1864, 78.—COUES, Key, 1872, 90; Check List, 1873, No. 27; 2d ed. 1882, No. 40; B. N. W. 1874, 19; B. Col. Val. 1878, 113.—B. B. & E., Hist. N. Am. B. 1, 1874, 87, pl. 6, fig. 1.—RIDGW. Nom. N. Am. B. 1881, No. 36.

HAB. Eastern United States, west to Nebraska and eastern Texas, north to the Connecticut Valley; resident and breeding throughout.

"SP. CHAR. Above ashy, a black frontal band. Beneath dull whitish; sides brownish chestnut, of more or less intensity. Feathers of the crown elongated into a flattened crest, which extends back as far as the occiput. Bill conical; lower edge of upper mandible nearly straight at the base. Fourth and fifth quills equal; third a little shorter than seventh; second rather shorter than the secondaries. Tail nearly even, the outer feather about .20 of an inch shorter than the longest. Upper parts ash-color, with a tinge of olivaceous. Forehead dark sooty-brown. The feathers of the upper part of the head and crest obscurely streaked with lighter brown. Under parts of head and body, sides of head, including auriculars, and a narrow space above the eye, dirty yellowish white, tinged with brown; purest on the side of head, the white very distinct in the loreal region, and including the tuft of bristly feathers over the nostrils, excepting the tips of those in contact with the bill, which are blackish. The sides of the body and the under tail-coverts are tinged with yellowish brown. The quills and tail feathers are edged with the color of the back, without any whitish. Bill black. Feet lead-color." (*Hist. N. Am. B.*)

Length, about 5.25 inches; extent, 9.25; wing, 3.05—3.45.

Perhaps no bird is more abundant in wooded districts of the southern half of the State, than this species; and this applies equally to all parts of the year. Roving in restless noisy troops through the woods, scolding at every intruder and calling to one another in harsh tones, they are often, on this account, very annoying to the collector or the hunter. During winter they become very familiar, approaching with confidence the immediate vicinity of dwellings (which, indeed, they seem inclined to shun only during the breeding season), and, in company with Snowbirds (*Junco hyemalis*), Carolina Chickadees, Nuthatches (*Sitta carolinensis*), Bluejays, and other familiar species, glean their portion from the refuse

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bread-crumbs, bits of meat, or indeed anything eat-
ates of this species in their general character resemble
Chickadees, but are much louder and more vehement.
male has a very pleasant call, consisting of a repeti-
syllables *péto, péto, péto* in a very clear and rather
g tone. The nest is built in cavities of trees, like
species of the family.

Subgenus *Parus* Linnaeus.

N. ed. 10, 1. 1758, 189; ed 12, 1. 1766, 340. Type, by elimination, *P. major* Linn.
Head not crested. Body and head full. Tail moderately long, and
Bill conical, not very stout; the upper and under outlines very gently
x. Tarsus but little longer than middle toe. Head and neck generally
h sides white. Nest in holes. Eggs white, sprinkled with red." (*Hist.*

of this subgenus which occur in Illinois, may be dis-
follows:

ACTERS. Above plain grayish, with or without distinct whitish edgings
others; beneath whitish, the sides tinged with ochreous, fulvous, or ru-
m, chin, and throat, black, or brownish, the sides of the head whitish.
young similar in plumage to the adult.

throat deep black.

ns Tail about equal to the wing (rarely a very little shorter, usually
and tail-feathers are not so much enlarged as the middle

HAB. Northeastern North America, or from northern United States east of the Great Plains and northward; winter visitant south to about 40° or a little further. (Replaced in the Rocky Mountain district and Great Plains and thence northward to Alaska by the more slender, lighter colored race, *septentrionalis* Harris.)

SP. CHAR. *Adult:* Entire pileum and cervix glossy black; chin, throat, and malar region black, this broken posteriorly by whitish tips to the feathers; sides of head and neck white. Upper parts ash gray, more or less tinged with yellowish; wings blackish, the feathers edged with light ashy, the greater coverts and tertials broadly edged with white. Tail dusky, the feathers edged with ashy, inclining to white on lateral rectrices. Median lower parts (from jugulum back) white, lateral portions buff. Bill black; feet bluish plumbeous, iris dark brown. *Young:* Very similar to the adult, but black of pileum and cervix without gloss, that of the throat more sooty, buff of sides less distinct, and plumage of looser texture.

Male (7 specimens): Wing, 2.60-2.75 (average, 2.66); tail, 2.60-2.75 (2.63); tarsus, .65-.70 (.69).

Female (3 specimens): Wing, 2.55-2.60 (2.58); tail, 2.50-2.60 (2.57), tarsus, .63-.70 (.69).

This familiar and active little bird is almost confined to the northern half of the State, making its appearance south of the 39th parallel, so far as the writer's knowledge and observation are concerned, only at rare or at least very irregular intervals during the coldest weather. Its habits are too well known to require description here.

Parus carolinensis Aud.

CAROLINA CHICKADEE.

Popular synonyms.—Carolina Titmouse; Southern Chickadee.

Parus carolinensis AUD. Orn. Biog. II, 1834, 474, pl. 160; B. Am. II, 1841, 152, pl. 127.—

BAIRD, B. N. Am. 1858, 392; Cat. N. Am. B. 1859, No. 293; Review, 1864, 81.—COUES, 2d Check List, 1892, No. 47; 2d Key, 1894, 265.—B. B. & R. Hist. N. Am. B. I, 1874, 102, pl. 7, fig. 3.—RIDGW. Nom. N. Am. B. 1891, No. 42.

Parus atricapillus var. *carolinensis* COUES, Key, 1872, 81; Check List, 1873, No. 31b.

HAB. Southern half of Eastern United States, north to or beyond 40°, west to eastern Texas and Indian Territory. (Resident throughout its range.)

SP. CHAR. Second quill appreciably longer than secondaries. Tail very little rounded. Length about 4.50 inches; wing less than 2.50; tail, 2.40.* Back brownish ash. Head above, and throat, black, separated on sides of head by white. Beneath white; brownish white on sides. Outer tail feathers, primaries, and secondaries, not edged with white."

This species, which is the more common one in Illinois (except the extreme northern counties) may readily be distinguished from *P. atricapillus* by the more extensive and more "solid" black on the throat; by the absence of distinct white edgings to the wing and tail feathers, and by the different proportionate length of the wing and tail. (See synoptical table.)

This pretty, active and familiar little bird occurs throughout the State, but is most common in the southern half, where it is the representative of the northern Black-cap (*P. atricapillus*). The

*In fourteen adults, the wing measures 2.40-2.60, the average being 2.46; tail 2.10-2.50 (average, 2.15); tarsus, .55-.65 (average, .60).

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as occupied by these two species are, however, by no means made out, but it is probable that the larger portion of the territory occupied by the present species, to the exclusion of the other, especially those of bottom-lands, are the favorite resort of the Chickadee, and in summer it may always be found wherever there are hickory trees or many red-bud trees, since in the soft wood of these kinds it is able to excavate with ease a hole for its nest. As a rule, however, it selects a cavity already made, as the hole of the Downy Woodpecker, a knot-hole, or a hole in a rail. In winter it is very familiar, keeping much about orchards, even in towns, and gleaning its daily food from the "black steps," where the table cloth is shaken, and where it can be seen perched on the edge of the garbage pail, and eating scraps of meat, etc., from the contents.

The notes of this species are decidedly louder than those of the Parus, and his spring song of *chick'-a-dee, chick'-a-dee, chick'-a-dee* in a very clear and sweet whistling tone, is very pleasing.

Parus hudsonicus Forst.

HUDSONIAN CHICKADEE.

Parus hudsonicus Hudsonian Titmouse; Hudson's Bay Titmouse, or Chickadee.

Forst. Philos. Trans. lxiii, 1772 383 430. AUD. Orn. Biog. ii, 1834, 1835. Aud. Orn. Biog. ii, 1835. BATES, B. N. Amer. Birds, 1863. BATES, B. N. Amer. Birds, 1863.

SUBFAMILY SITTINÆ.—THE NUTHATCHES.

The *Sittinæ* include a single American genus, *Sitta*, which is represented by numerous species in Europe and Asia. The allied genus *Sittella* belongs to Australia.

GENUS *SITTA* LINNÆUS.

Sitta LINNÆUS, Syst. Nat. ed. 10, i. 1758, p. 115. Type, *S. europæa* LINN.

"GEN. CHAR. Bill subulate, acutely pointed, compressed, about as long as the head; culmen and commissure nearly straight; gonys convex and ascending; nostrils covered by a tuft of bristles directed forward. Tarsal stout, scutellate, about equal to the middle toe, much shorter than the hinder, the claw of which is half the total length. Outer lateral toe much longer than inner, and nearly equal to the middle. Tail very short, broad, and nearly even; the feathers soft and truncate. Wings reaching nearly to the end of the tail, long and acute, the first primary one third (or less) the third, or longest. Iris brown. Nest in holes of trees. Eggs white, spotted with reddish." (*Hist. N. Am. B.*)

Species.

COMMON CHARACTERS. Above plain bluish gray, the crown different in color (black, plumbeous, or light brown); tail and wings varied, more or less (the wings slightly), with black and white; beneath chiefly plain whitish, rusty, or dull buffy.

- α¹ Crown glossy black in the male, plumbeous in the female; a broad white superciliary stripe.
 1. *S. carolinensis*. Wing more than 3.50. Whole side of head and most of lower parts pure white, the lower tail coverts spotted with chestnut-rufous; tertials marked with black. *Male* with entire pileum and cervix glossy black; *female* with pileum dusky plumbeous, the cervix black.
 2. *S. canadensis*. Wing less than 3 inches. Side of head with a broad black stripe; lower parts, except throat, light rusty, or ochraceous; tertials plain grayish. *Male* with pileum and cervix glossy black, *female* with the same parts dark plumbeous.
- α² Crown light brown. Sexes alike.
 3. *S. pusilla*. Pileum light brown, down to the eyes, the lores and postocular stripe somewhat darker; a conspicuous cervical spot of white; lower parts buffy. *Young* with the crown grayish, the wing-coverts edged with light fulvous. Wing about 2.60.

The Brown-headed Nuthatch (*S. pusilla*), is a species belonging to the Southern States, where it is abundant from Louisiana and Florida to lower Maryland. It has been taken in the vicinity of St. Louis, Missouri, and also in Michigan and Ohio; therefore, its presence in the southern part of Illinois, especially among the pine woods which there occur in certain localities, is to be anticipated.

Popular synonyms.—Tomtit; Blue Sapsucker.

Sitta carolinensis LATH. Ind. Orn. i, 1790, 262.—WILS. Am. Orn. i, 1808, 103.—NUTT. Man. i, 1832, 581.—AUD. Orn. Biog. ii, 1834, 299; v, 1839, 473, pl. 1839, 167; B. Am. iv, 1842, 175, pl. 247.—BAIRD, B. N. Am. 1858, 374; Cat. 1859, No. 277; Review, 1864, 86.—COUES, Key, 1872, 83; Check List, 1873, ed. 1883, No. 57; B. N. W. 1874, 24.—B. B. & R. Hist. N. Am. B. i, 1874, figs. 1, 2.—RIDGW. Nom. N. Am. B. 1881, No. 51.

HAB. Eastern United States and British Provinces. (Replaced in western States by the more slender billed, duller colored form, *S. carolinensis aculeata*.)

This well-known bird is abundant throughout the State, a permanent resident everywhere except perhaps in the northern counties. In the South it breeds very early, the having observed, on April 19, 1883, a female feeding well-feathered young in a knot-hole of a small white-oak tree (about 30 feet from the ground). A week later the tree was cut down, but the bird had flown. This was at Wheatland, Indiana, but there is no doubt that the species breeds equally early in corresponding latitudes in Illinois.

Sitta canadensis Linn.

RED-BELLIED NUTHATCH.

Popular synonym.—Canada Nuthatch.

Sitta canadensis LINN. S. N. ed. 12, i, 1766, 177.—NUTT. Man. i, 1832, 583; 2d ed. 1840, 697.—AUD. Orn. Biog. ii, 1834, 24, pl. 105; synop. 1839, 167; B. Am. iv, 1842, pl. 248.—BAIRD, B. N. Am. 1858, 376; Cat. N. Am. B. 1859, No. 279; Review, 1864, 86.—COUES, Key, 1872, 83; Check List, 1873, No. 39; 2d ed. 1882, No. 59; B. N. W. 1874, 25; B. Col. Val. 1878, 136.—B. B. & R. Hist. N. A. B. i, 1874, 118, pl. 8, fig. 7.—RIDGW. Nom. N. Am. B. 1881, No. 52.

Sitta varia, BAIRD. Trav. 1791, 289 bis.—WILS. Am. Orn. i, 1808, 40, pl. 2, fig. 4.

HAB. Northern North America, to the limit of timber; breeding chiefly in the northern States (except in elevated mountain regions); Eastern United States and Canada.

through the woods, and making its presence known, when it cannot be seen, by its penny-trumpet *toot, toot*,—a very peculiar note, totally different from that of its larger white-bellied relative (*S. carolinensis*).

Mr. Nelson makes the following reference to this species in his list of the birds of northeastern Illinois:

“A rare summer resident. I found a pair near Chicago with full grown young the first of July, and Mr. Rice observed a pair feeding unfledged young the last of April, 1874, at Evanston. The excavation containing the nest was in a tree, standing on one of the principal streets of the town. It was about twenty feet from the ground. The young were thrusting their heads out of the hole and clamoring for food, thus attracting his attention when they would otherwise have been unnoticed.”

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FAMILY CETHIIDÆ.—THE CREEPERS.

Bill slender and arched; hind toe longer than middle toe, the claw strongly arched. Tail lengthened, graduated, the feathers stiff and

brief diagnosis is sufficient to characterize the family we exclude from it the European genus *Tichodroma*, in short, even tail, with feathers broad and rounded in other characters. As thus restricted, the family one genus, *Certhia*, the single North American species quite circumpolar, though modified into more or less geographical races in different parts of its habitat.

GENUS CETHIA LINNÆUS.

LINNÆUS, Syst. Nat. 10th ed. 1758, 112. Type, *C. familiaris* LINN.

Plumage soft and loose. Bill as long as head, not notched, compressed; mes decurved. Nostrils not overhung by feathers, linear, with an in- scale, as in *Troglodytes*. No preal bristles. And the loreal and frontal

Certhia rufa BART. Trav. Fla. 1791, 289 bis (*nomen nudum*).—COUES, Pr. Phil. Sc 1875, 347.

Certhia familiaris rufa RIDGW. Nom. N. Am. B. 1881, No. 55.

Certhia americana BONAP. Comp. List, 1838, 11.—NUTT. Man. 1, 2d ed. 1840, 791.—BAIRD, B. N. Am. 1858, 372; Cat. N. Am. B. 1859, No. 275; Review. 1864, 89.

Certhia familiaris B. B. & R. Hist. N. Am. B. 1, 1874, 125, pl. 8, fig. 11.

HAB. Northern and eastern North America, breeding from northern border of United States northward. (Represented in the Rocky Mountain region by the grayer race *montana*, and along the Pacific coast by the rusty colored *occidentalis*.)

"SP. CHAR. Bill about the length of the head. Above dark brown, with a slightly rufous shade, each feather streaked centrally, but not abruptly, with whitish; rump rusty. Beneath almost silky white; the under tail-coverts with a faint rusty tinge. A white streak over the eye; the ear-coverts streaked with whitish. Tail feathers brown centrally, the edges paler yellowish-brown. Wings with a transverse bar of pale reddish white across both webs. Length, 5.50; wing, 2.60; tail, 2.90.

"Young. Resembling the adult, but streaks above indistinct, and the feathers there tipped indistinctly with blackish; the rufous restricted to the upper tail-coverts. Breast and jugulum with very minute blackish wavings or indistinct bars." (*Hist. N. Am. B.*)

This very inconspicuous little bird is probably known to few besides the special student of ornithology and the collector. He is a tiny brown-streaked fellow, who may occasionally be seen during the colder parts of the year, nimbly creeping up the trunks of trees, ascending in more or less of a spiral, and when the first limbs are reached flying to the foot of another tree and repeating the performance. If too closely approached he manages to keep on the side opposite the observer, and should the latter attempt to go around he moves also—keeping the tree always between.

The nest is normally placed behind loose plates of semi-detached bark, on the trunk of a tree, and is composed chiefly of the fine inner bark of trees. It is so situated that the overhanging bark forms a shelter from the rain, and the loose and irregular character of the mass of strips and fibers in which the small nest is hollowed out, so effectually conceals it from the hungry or curious eye, that it has rarely been seen.

**FAMILY TROGLODYTIDÆ — THE WRENS AND MOCKING-
THRUSHES.**

CHARACTERS. Anterior covering of tarsus distinctly scutellate. Bill slender, sometimes lengthened and more or less arched, the culmen more or less convex. Wing rounded with the first quail well developed, projecting beyond the tips of the primary-coverts.

Although the Mocking-Thrushes present several strongly marked characters not shared by the true Wrens, we are compelled for the present to place them in the same family. There can be little doubt, however, that they should constitute a family (*Mimidæ*) by themselves.

The two so-called subfamilies may be distinguished by the following characters:—

Troglodytinæ. No rectal bristles. Inner toe united to the middle by at least half of its basal phalanx. Wing less than 3.50 inches.

Miminæ. Rectal bristles well developed. Inner toe wholly separated at the base from the middle toe. Wing more than 3.50 inches.

Subfamily Troglodytidæ.—THE WRENS.

"CHAR. Rectal bristles wanting; the loreal feathers with bristly points; the frontal feathers generally not reaching to nostrils. Nostrils variable, exposed or not covered by

"In the *Turdidæ* the basal joint of the outer lateral toe is united to the middle toe, sometimes only a part of it; and the inner toe is cleft almost to its very base, so as to be opposable to the hind toe, separate from the others. In the *Troglodytidæ*, on the contrary, the inner toe is united by half its basal joint to the middle toe, sometimes by the whole of this joint; and the second joint of the outer enters wholly or partially into this union, instead of the basal joint only. In addition to this character, the open, exposed nostrils, the usually lengthened bill, the generally equal lateral toes, the short rounded wings, the graduated tail, etc., furnish points of distinction." (*Hist. N. Am. B.*)

In several genera which unquestionably belong to this family, (*Salpinctes*, *Campylorhynchus*, etc.) the postero-lateral plates of the tarsal envelope are divided, much as in the Larks and tracheophone Passeres (*Dendrocolaptidæ* and *Formicariidæ*), and with the Larks, are the only members of the *Oscines* which have these plates thus divided. It will therefore be seen that Sundevall's primary division of the *Oscines* into two groups based upon this character—"Lamini plantares," to include those which have these plates undivided (assumed by the author in question to include all oscinine families except the Larks), and "*Scutiplantares*," to include those with these plates divided (including the *Alaudidæ* alone), is hardly warranted by the facts in the case.

North American Genera and Subgenera of *Troglodytinæ*.

- a.*¹ Wing more than 3.00 inches *Campylorhynchus*.
- a.*² Wing less than 3.00 inches.
 - b.*¹ Outer toe much longer than the inner.
 - c.*¹ Culmen equal to tarsus, depressed at base *Catherpes*.
 - c.*² Culmen shorter than tarsus, compressed at base *Salpinctes*.
 - b.*² Outer toe not distinctly longer than the inner.
 - c.*¹ Tail moderately graduated, or rounded, the tips of the lower coverts falling far short of the ends of the lateral rectrices.
 - d.*¹ Gonys concave, the maxilla decidedly, though gently, decurved at tip *Thryothorus*.
 - e.*¹ Tail much shorter than wing. Bill stouter, the culmen moderately compressed at base (Subgenus *Thryothorus*).
 - e.*² Tail equal to or longer than wing. Bill slender, the culmen much compressed at base (Subgenus *Thryomanes*).
 - d.*² Gonys straight, the maxilla scarcely decurved at tip *Troglodytes*.
 - e.*¹ Culmen decidedly curved, the bill stouter. Tail nearly or quite as long as wing (Subgenus *Troglodytes*).
 - e.*² Culmen straight, the bill subulate. Tail much shorter than wing (Subgenus *Anorthoura*).

Subgenus *Thryomanes* Selater.*Thryothorus bewickii* (Aud.)

BEWICK'S WREN.

Popular synonyms.—Long-tailed House Wren; Long-tailed Wren.

Troglodytes bewickii AUD. Orn. Biog. i, 1831, 96 pl. 18. Synop. 1839, 74; B. Am. U. 1841, 129, pl. 118.—NUTT. Man. i, 1832, 431; 2d ed. i, 1840, 489.

Thryothorus bewickii BAIRD, B. N. Am. 1858, 365 (*Thryothorus*; Cat. N. Am. B. 1859, No. 267; Review, 1864, 126.—COOPER, Key, 1872, 89; Check List, 1873, No. 48, 2d ed. 1884, No. 71; B. N. W. 1874, 31; B. Col. Val. 1878, 169. B. B. & R. Hist. N. Am. B. i, 1874, 145, pl. 9, fig. 3.

Thryomanes bewickii RIDGW. Nom. N. Am. B. 1881, No. 61.

HAB. Eastern United States, chiefly west of the Alleghantes. In the interior, north to Minnesota, eastward, north to New Jersey. Very irregularly distributed, being apparently unknown in many localities within the limits of its general range. Not recorded from most portions of the Atlantic coast. Migratory in the northern parts of its range.

"SP. CHAR. Above dark rufous-brown; rump and middle tail-feathers sometimes a little paler, and very slightly tinged with gray, and together with the exposed surface of secondaries distinctly barred with dusky. Beneath soiled plumbeous-whitish; flanks brown. Crissum banded, ground color of quills and tail feathers brownish black. Length, 5.50; wing, 2.25; tail, 2.50. Length from nostril, 39; along gape, 70."* (*Hist. N. Am. B.*)

In most parts of southern Illinois, this is the "House Wren" *par excellence*; and even in localities where the true House Wren (*Troglodytes aedon*) occurs, Bewick's Wren is far the more numerous of the two. In Wabash county, the writer has never seen nor even heard a *T. aedon*; and in Richland county, where the latter was not uncommon *T. bewickii* was extremely abundant, nesting in all sorts of places about barns, stables and other buildings, while the former

heard. Not a voluble gabble, like the House Wren's merry roundelay, but a fine, clear, bold song, uttered as the singer sits with head thrown back and long tail pendent,—a song which may be heard a quarter of a mile or more, and in comparison with which the faint chant of the Song Sparrow sinks into insignificance. The ordinary note is a soft low *plit*, uttered as the bird hops about, its long tail carried erect or even leaning forward, and jerked to one side at short intervals. In its movements it is altogether more deliberate than either *T. ludovicianus* or *T. aedon*, but nothing can excel it in quickness when it is pursued.

The nest of Bewick's Wren is placed in all sorts of odd places. Usually it is in a mortise-hole of a beam or joist, or some well-concealed corner. One was beneath the board covering of an ash-hopper; another, in a joint of stovepipe which lay horizontally across two joists in the garret of a smoke-house; a third was behind the weather-boarding of an ice-house, while a fourth was in the bottom of the conical portion of a quail-net that had been hung up against the inner side of a buggy shed. None of these nests would have been found had not the bird been seen to enter.

The nest is generally very bulky, though its size is regulated by that of the cavity in which it is placed. Its materials consist of sticks, straw, coarse feathers, fine chips, etc., matted together with spiders' webs, and lined with tow and soft feathers of barnyard fowls. The eggs are usually seven to nine in number, but occasionally more,* and are white, rather sparsely speckled round the larger end with brown.

Mr. Nelson records the breeding of this species in the extreme northern part of the State, as follows:

"A pair of these birds appeared in a vacant lot in Chicago the first of June, 1876, and taking possession of a convenient corner in the roof of an arbor proceeded to raise their young. At intervals through the day the male would mount to the top of some house, or the topmost twig of a tree in the vicinity, and sing for an hour or more. The family suddenly left about the middle of July."

*Mrs. Mary A. Turner, of Mt. Carmel, sent to the National Museum a nest of this species containing eleven eggs.

wooded localities, excepting coniferous forests, were his chosen abode, and where he was equally at home in the cottonwoods of the river valleys, or the aspens just below the timber-line on lofty mountains. He was there everywhere the same quick, saucy little fellow, and in the spring and summer an incessant and voluble songster.

The following very interesting notes regarding the length of time required for the bringing forth of a brood of this species, were communicated to Professor Baird by Col. S. T. Walker, of Milton, Florida:

"In looking over an old memorandum book the other day, I came across the following notes made in 1886, concerning the nesting of the House Wren. I was sick at the time, and watched the whole proceeding, from the laying of the first stick to the conclusion. The nest was placed in one of the pigeon-holes of my desk, and the birds effected an entrance to the room through sundry cracks in the log cabin.

"Nest begun.	April 15th
"Nest completed and first egg laid	April 27th
"Last egg laid	May 3d
"Began incubation.....	May 4th
"Hatching completed.....	May 18th
"Young began to fly.....	May 27th
"Young left the nest.....	June 1st
"Total time occupied	47 days."

Subgenus *Anorthoura* Rennie.

HAB. North America east of the Rocky Mountains, breeding chiefly north of the United States; south in winter nearly or quite to the Gulf coast.

"SP. CHAR. Bill very straight, slender, and conical; shorter than the head. Tail considerably shorter than the wings, which reach to its middle. Upper parts reddish brown; becoming brighter to the rump and tail; everywhere, except on the head and upper part of the back, with transverse bars of dusky and of lighter. Scapulars and wing-coverts with spots of white. Beneath pale reddish brown, barred on the posterior half of the body with dusky and whitish, and spotted with white more anteriorly; outer web of primaries similarly spotted with pale brownish white. An indistinct pale line over the eye. Length, about 4 inches; wing, 1.66; tail, 1.26." (*Hist. N. Am. B.*)

"First Plumage: male. Remiges, rectrices, etc., as in adult; rest of upper parts dark reddish brown, becoming more dusky anteriorly; no trace of bars except on wings and tail. Beneath dull smoky brown, with a strong ferruginous suffusion on sides, anal region, and crissum; every feather of under parts with a bar of dark brown. From a specimen in my collection taken at Upton, Me., August 4, 1874." (*BREWSTER, Bull. Nutt. Orn. Club, Jan., 1878, p. 22.*)

This little bird visits Illinois only at the approach of cold weather, and leaves with the advent of spring. He frequents chiefly the woods, more especially in bottom lands, where he may be seen about old logs, hopping nimbly in and out among the knot-holes and other hollow places, then flitting, like a brown butterfly, to another place of refuge on the too near approach of an intruder. Occasionally he may be seen about wood-piles or lumber-yards within towns, but he is never on the same degree of intimacy with man as the House Wren, partaking, in his sylvan proclivities, more of the nature of his larger and brighter-colored relative, the Carolina Wren.

GENUS *CISTOTHORUS* CABANIS.

Cistothorus CABANIS, Mus. Hein. 1, 1850, 77. Type, *Troglodytes stellaris* LIGHT.

Telmatoodytes CABANIS, Mus. Hein. 1, 1850, 78. Type, *Thryothorus arundinaceus*

VIEILL., = *Certhia palustris* WILS.)

"GEN. CHAR. Bill about as long as the head or much shorter, much compressed, not notched, gently decurved from the middle; the gonys slightly concave or straight. Toes reaching to the end of the tail. Tarsus longer than the middle toe. Hind toe longer than the lateral, shorter than the middle. Lateral toes about equal. Hind toe longer than or equal to its digit. Wings rather longer than the tail, all the feathers of which are much graduated; the lateral only two thirds the middle. The feathers narrow. Back black, conspicuously streaked with white.

"Of this genus there are two sections, *Cistothorus* proper and *Telmatoodytes*, the diagnoses of which have already been given. The two North American species present the feature, unique among our Wrens, of white streaks on the back.

- "A. *Cistothorus*. Bill half length of head. No white superciliary streak. Head and rump and back streaked with white. Tail dusky, barred with brown *C. stellaris*.
- "B. *Telmatoctes*. Bill length of head. A white superciliary stripe. Back alone streaked with white. Tail feathers black, barred with whitish. *C. palustris*."
—(Hist. N. Am. B.)

Subgenus *Cistothorus* Cabanis.

Cistothorus stellaris (Licht.)

SHORT-BILLED MARSH WREN.

Troglodytes stellaris "LICHT." NAUM. Vog. Deutschl. III, 1823, 724.

Cistothorus stellaris CAB. Mus. Hein. I, 1860, 77.—BARD, B. N. Am. 1858, 365; Cat. N. Am. B. 1859, No. 268; Review, 1864, 146. COUES, Key, 1873, 88; Check List, 1877, No. 52; 2d ed. 1882, No. 81; B. N. W. 1874, 36; B. Col. Vol. 1878, 180.—B. B. & R. Hist. N. Am. B. I, 1874, 159, pl. 9, fig. 7. RIDGW. Nom. N. Am. B. 1881, No. 68.

Troglodytes brevirostris NUTT. Man. I, 1832, 426; 2d ed. I, 1840, 498.—AUD. Orn. Biog. II, 1834, 427; Synop. 1839, 77. B. Am. II, 1841, 138, pl. 124.

HAB. Eastern United States, north to Massachusetts and Manitoba, west to the Great Plains and even to Utah; winters in the Southern States.

"SP. CHAR. Bill very short, scarcely half the length of the head. Wing and tail about equal. Hinder part of the crown and the scapular and interscapular region of the back and rump almost black, streaked with white. Tail dusky, the feathers barred throughout with brown (the color grayish on the under surface). Beneath white, the sides, upper part of breast, and under tail-coverts reddish brown. Length, 4.50, wing, 1.75; tail, 1.75." (Hist. N. Am. B.)

"Autumnal plumage: young male. Above similar to adult, but darker, especially on nape and pileum. Throat and abdomen light buff; breast, sides, anal region, and crissum rusty-brown, paler and with white tipplings to the feathers anteriorly. From a specimen in my collection shot at Cambridge, Mass., September 19, 1870." (BREWSTER, Bull. Nutt. Orn. Club, January, 1878, 22.)



right grass- or sedge-stems, and is of globular form, with the entrance a small hole in the side. The eggs, however, are pure white, without markings, instead of deep chocolate-brown, or densely speckled with the same on a lighter ground.

Subgenus *Telmatodytes* Cabanis.

Cistothorus palustris (Wils.)

LONG-BILLED MARSH WREN.

Popular synonyms.—Grass Wren; Stink-bird (N. E. Ills.)

Certhia palustris WILS. Am. Orn. II, 1810, 58, pl. 12, fig. 4.

Troglodytes palustris Bonap. Jour. Phila. Ac. iv, 1824, 39.—SW. & RICH. F. B. A. II, 1831, 319.—AUD. Orn. Biog. I, 1831, 500, pl. 100; Synop. 1839, 77; B. Am. II, 1841, 136, pl. 123.

—NUTT. Man. I, 1832, 439; 2d ed. I, 1840, 496.

Cistothorus palustris BAIRD, B. N. Am. 1858, 364; Cat. N. Am. B. 1859, No. 263; Review 1864, 147.—B. B. & R. Hist. N. Am. B., I, 1874, 161, pl. 9, fig. 6.

Telmatodytes palustris COUES, Key, 1872, 87; Check List, 1873, No. 51; 2d ed. 1882, No. 79; B. N. W. 1874, 34; B. Col. Val. 1878, 173 (part).—RIDGW. Nom. N. Am. B. 1881, No. 67.

HAB. Eastern North America, breeding nearly throughout its range, and wintering in the Southern States; accidental in Greenland. (Replaced in the West by the race or subspecies *paludicola*, Baird.)

"SP. CHAR. Bill about as long as head. Tail and wing nearly equal. Upper parts of a dull reddish brown, except on the crown, interscapular region, outer surface of tertials, and tail feathers, which are almost black; the first with a median patch like the ground color; the second with short streaks of white, extending round on the sides of the neck; the third indented with brown; the fourth barred with whitish, decreasing in amount from the outer feather, which is marked from the base, to the fifth, where it is confined to the tips; the two middle feathers above like the back, and barred throughout with dusky. Beneath rather pure white, the sides and under tail-coverts of a lighter shade of brown than the back; a white streak over the eye. Length, 5.50; wing, 3.08; tail, 3.00." (*Hist. N. Am. B.*)

The Long-billed Marsh Wren is an abundant bird in suitable localities, which consist of marshes or swamps grown up with rank sedges and grasses, to the upright stems of which its curious nest is attached. The species occurs throughout the State, and sometimes winters in the extreme southern portion. Although usually fastening the nest to upright sedge- or reed-stalks, the writer has found several that were built in small willow trees, at heights varying from six to fifteen feet above high tide. This was in the marshes of the Potomac river, near the foot of Analostan Island, opposite Washington, D. C., where the species is excessively abundant.

BIRDS OF ILLINOIS.

Subfamily *Miminzæ*.—The Mocking-Thrushes.

Principal characters of this so-called subfamily, have already been mentioned on page 88. The group is probably entitled to family rank, the differences from the true Wrens being very marked. The Mocking-Thrushes have usually been placed in the subfamily *Turdizæ*, but they are to be even less closely related to the Thrushes than to

as has been stated in "History of North American Birds" (Vol. I., *Miminzæ* "have a somewhat thrush-like appearance, but they differ from (*Oroscoptes*) with longer, much more graduated, and more strongly short, concave wings, about equal to or shorter than the body, usually lengthened, sometimes decurved bill without notch, very marked scutellæ on the anterior face of the tarsus. The feathers are soft and not ending in bristly points. The plumage is in all shades of brown, gray or plumbeous. Most of the species, in addition to a melodious native song, possess the power of imitating the notes of other birds; sometimes, as in the American Mocking-Thrush, to an eminent degree. All are peculiar to the

thrust forward, that he assumes almost the shape of an irregular ring or triangle, and so quite deceives one as to the length of his slender body. * * * His flight is short, and every motion is exceedingly quick and nervous.

"In the tall bleached sedges of the previous year, this Wren is very easily seen in May or early in June. Then he is especially lively, hanging sidewise to the smooth perpendicular culms, or grasping two opposite ones, one in each wiry foot, his legs stretched apart in a horizontal line; or tossing himself up several feet into the air, with head and tail up, he will drop down, with a light and graceful flutter, making his very best attempt at a song as he thus describes an abrupt curve. That song begins with a rather harsh screeching note, followed by a rattling twitter, and ends in a note very much like that with which it began.

"Pulling the boat somewhat into the sedges, we wade among them half way to the knees in water. Here is the nest! About the size of a common cocoanut, it is woven and interlaced by the dried and discolored leaves of the sedges and marsh-grass, intermixed with vegetable down, and sometimes with an abundance of green moss, so as to make the walls quite thick and firm, and is lined with finer materials—perhaps the down from a vacated Duck's nest in the neighborhood, or the feathers of a Coot devoured by the Marsh Hawk; it has a hole in the side, so beset with down as almost to close it up—the artistic structure being hung to the green or dried sedges or marsh-grass only a few inches, or sometimes three or four feet from the water. These nests are often found in large numbers in the same locality, the greater part of them being unoccupied."

Harporhynchus rufus* (Linn.)*BROWN THRASHER.**

Popular synonyms.—French Mocking-bird; Sandy Mocking-bird, Ferruginous Mocking-bird, Fox-colored Mocking-bird; Thrasher.

Turdus rufus LINN. S. N. ed. 10, 1, 1758, 169; ed. 12, 1, 1766, 253. — WILK. Am. Orn. II, 1810, 83, pl. 14. — AUD. Orn. Biog. II, 1834, 102; v. 1850, 410, pl. 116.

Oreopheus rufus SW. & RICH. F. B. A. II, 1831, 189. — AUD. Synop. 1839, 68; B. Am. III, 1841, 9, pl. 141.

Harporhynchus rufus CABAN. Mus. Helm. I, 1850, 82. — BAIRO, B. N. Am. 1858, 333, Ont. N. Am. B. 1859, No. 261; Review, 1861, 44. COUES, Key, 1872, 75; Check List, 1873, No. 10; 2d ed. 1882, No. 17; B. N. W. 1874, 9; Col. Vol. 1878, 61. B. B. & R. Hist. N. Am. B. I, 1874, 57, pl. 3, fig. 1. — RIDGW. Nom. N. Am. B. 1881, No. 13.

HAB. Eastern North America, west to the Rocky Mountains and North to the British Provinces, winters in the Southern U. S.

SP. CHAR. Exposed portion of the bill shorter than the head. Outline of lower mandible straight. Above light cinnamon-red; beneath pale rufous-white with longitudinal streaks of dark brown, excepting on the chin, throat, middle of the belly and under tail-coverts. These spots anteriorly are reddish brown in their terminal portion. The inner surface of the wing and the inner edges of the primaries are cinnamon; the concealed portion of the quills otherwise is dark brown. The median and greater wing-coverts become blackish brown towards the end, followed by white, producing two conspicuous bands. The tail feathers are all rufous, the external ones obscurely tipped with whitish, the shafts of the same color with the vanes. Length, 11.15; wing, 4.15; tail, 5.20; tarsus, 1.30.* (*Hist. N. Am. B.*)

Though not a very familiar bird—preferring rather hedges and thickets by the wayside—the Brown Thrasher is nevertheless well known from his eminent abilities as a songster, in which respect he has no superior and few rivals in those portions of the country which he inhabits. Besides thickets and hedge-rows, he frequents also open places where there are isolated thorny trees, in which to hide his nest, and where, while his mate is sitting, he mounts to

extremely varied, but almost constantly uttered in pairs, producing by the latter peculiarity a song unmistakably individual in character.

GENUS *MIMUS* BOIE.

Mimus BOIE, Isis, Oct. 1826, 972. Type, *Turdus polyglottos* LINN.

"GEN. CHAR. Bill not much more than half the length of the head: gently decurved from the base, notched at tip; commissure curved. Gonys straight, or slightly concave. Rictal bristles quite well developed. Wings rather shorter than the tail. First primary about equal to, or rather more than half, the second; third, fourth, and fifth quills nearly equal, sixth scarcely shorter. Tail considerably graduated; the feathers stiff, rather narrow, especially the outer webs, lateral feathers about three quarters of an inch the shorter, in the type. Tarsi longer than middle toe and claw by rather less than an additional claw; tarsi conspicuously and strongly scutellate; broad plates seven.

"Of this genus there are many species in America, although but one occurs within the limits of the United States.

"The single North American species *M. polyglottus* is ashy brown above, white beneath; wings and tail black, the former much varied with white." (*Hist. N. Am. B.*)

Mimus polyglottos (Linn.)

MOCKING-BIRD.

Popular synonym.—Southern Mocking-bird.

Turdus polyglottos LINN. S. N. ed. 10, 1, 1758, 169; ed. 12, 1, 1766, 293.

Turdus polyglottus GMEL. S. N. 1, 1788, 812.—WILS. Am. Orn. ii, 1810, 14, pl. 10, fig. 1.—AUD. Orn. Biog. 1, 1831, 108, pl. 21.—NUTT. Man. 1, 1832, 320.

Mimus polyglottus BONAP. Comp. Geog. List, 1837, 17.—BAIRD, B. N. Am. 1858, 344; Cat. N. Am. B. 1859, No. 253; Review, 1864, 48.—COUES, Key, 1872, 74; Check List, 1873, No. 8; 2d ed. 1882, No. 15; B. N. W. 1874, 8; B. Col. Vol. 1878, 53.—B. B. & B. Hist. N. Am. B. i, 1874, 49, pl. 3, fig. 4.—RIDGW. Nom. N. Am. B. 1891, No. 11.

Orpheus polyglottus SWAINS. Zool. Jour. iii, 1827, 167.—AUD. Synop. 1839, 87; B. Am. ii, 1841, 187, pl. 138.

HAB. United States, chiefly south of 40°, but occasionally to, or even across, the northern border (west of the Mississippi, breeding as far north as Ft. Fetterman, Wyoming Terr.); Mexico, and Greater Antilles. (Resident throughout its range.)

"SP. CHAR. Third and fourth quills longest; second about equal to eighth; the first half or more than half the second. Tail considerably graduated. Above ashy brown, the feathers very obsoletely darker centrally, and towards the light plumbeous downy basal portion (scarcely appreciable, except when the feathers are lifted). The under parts are white, with a faint brownish tinge, except on the chin, and with a shade of ash across the breast. There is a pale superciliary stripe, but the lores are dusky. The wings and tail are dark brown, nearly black, except the lesser wing-coverts, which are like the back; the middle and greater tipped with white, forming two bands; the basal portion of the primaries white; most extended on the inner primaries. The outer tail-feather is white, sometimes a little mottled; the second is mostly white, except on the outer web and towards the base; the third with a white spot on the end; the rest, except the middle, very slightly or not at all tipped with white. The bill and legs are black. Length, 9.50; wing, 4.50; tail, 5.00.

"Young. Similar, but distinctly spotted with dusky on the breast, and obsoletely on the back." (*Hist. N. Am. B.*)

So well known are the habits and other characteristics of the Mocking-bird that nearly all that could be written here would be but a repetition of what has been previously published. In Illinois, as in many other States, its distribution is very irregular, its absence from certain localities apparently in every way suited to its requirements being very difficult to account for. Thus, while one or two pairs breed in the outskirts of Mount Carmel nearly every season, it is nowhere in that vicinity a common bird. Thirty miles further north, however, in the neighborhood of Olney, where the country is more open, I have found it almost abundant, on one occasion six males having been seen and heard singing along the roadside during a three miles drive from the town.

Mr. H. K. Coale informs me that he saw a Mocking-bird in Starke county, Indiana, 60 miles southeast of Chicago, January 1st, 1884; that Mr. Green Smith had met with it at Kensington Station, Illinois, and that several have been observed in the parks and door-yards of Chicago. In the extreme southern portion of the State the species is abundant in suitable localities, and is resident through the year.

While without a rival in variety of notes and unequalled in brilliancy of song, the Mocking-bird can scarcely be considered our finest singer. Remarkable as are his powers of imitation, he cannot reproduce the metallic harmony of the smaller Thrushes (*Hylodichla*), and perhaps not even the trill of the Canary. To our mind, the Brown Thrasher has a sweeter song, and one equally vigorous; but there is a bold brilliancy to the vocal performance of *Mimus* that is peculiarly his own, and which makes him chief of songsters.

tion of the tarsal plates; and but for the difference in coloration (uniform plumbeous, instead of gray above and white beneath), we would hardly be inclined to distinguish the two generically.

"The single species known is lead-colored, with black cap, and chestnut-red under tail-coverts." (*Hist. N. Am. B.*)

Galeoscoptes carolinensis (Linn.)

CATBIRD.

Popular synonym.—English Mocking-bird (Virginia).

Muscicapa carolinensis LINN. S. N. ed. 12, 1, 1766, 338.

Orpheus carolinensis AUD. Synop. 1839, 88; B. Am. II, 1841, 195, pl. 140.

Mimus carolinensis "GRAY" SCH. P. Z. S. 1856, [294].—BAIRD, B. N. Am. 1858, 346; Cat. N. Am. B. 1859, No. 254.—COUES, Key, 1872, 74; Check List, 1873, No. 9; 2d ed. 1881, No. 16. B. N. W. 1874, 8; B. Col. Val. 1878, 56.

Galeoscoptes carolinensis CABAN. Mus. Hein. 1, 1850, 82.—BAIRD, Review, 1864, 54.—B. B. & R. Hist. N. Am. B. 1, 1874, 52, pl. 3, fig. 5.—RIDGW. Nom. N. Am. B. 1881, No. 12.

Turdus lividis WILS. Am. Orn. II, 1810, 90, pl. 14, fig. 3.

Turdus felivox VIEILL. Ols. Am. Sept. II, 1807, 10, pl. 67.

Orpheus felivox SW. & RICH. F. B. A. II, 1831, 192.

HAB. Eastern North America, north to about lat. 54° in the interior; west to, and including, the Rocky Mountains, and along the northern boundary extending to Oregon and Washington Terr. Winters from the Southern States south to Panama; Cuba; Bermudas.

SP. CHAR. Adult: Uniform plumbeous-slate, lighter below; pileum dull black, or brownish black, abruptly defined laterally, but anteriorly and posteriorly gradually blending into the dark grayish or slaty of the forehead and nape—the former often with a smoky brown tinge. Tail uniform slate-black, the under surface of the lateral rectrices with the outer web and tip of inner web sometimes grayish, the inner web occasionally indistinctly barred with the same. Crissum chestnut, the feathers slaty beneath the surface. Bill jet black; iris deep brown; legs and feet black, the soles of the toes olive-yellowish. **Young:** Similar to the adult, but blackish of pileum less distinct, and lacking sharp definition laterally, lower parts very faintly mottled, transversely, with darker, and slightly tinged with brownish (as are also the upper parts), the crissum dull light rusty brownish.

Mal-: Total length, about 8.70–9.00 inches; extent, 11.00–11.50; wing, 3.45–3.75; tail, 3.70–4.25; culmen, .65–.75; tarsus, 1.05–1.15. **Female,** averaging a little smaller.

The Catbird and its habits are too well known to require extended mention in this work. Like a candidate for political honors, he is a rascal and reprobate of the "first water" to some, but the pink of perfection to others. He is, indeed, a bird of varied qualities, which show in different lights, according to the personal predilections or prejudices of the individual who is expressing an opinion respecting his merits or demerits.

One of our most familiar birds, and one which should rank in our affections along with the Bluebird and Robin, is the Catbird. But unfortunately he is the subject of very general prejudice, not merely

on account of his undeniable propensity to steal cherries, but also because many persons dislike the cat-like notes which he utters on certain occasions. But if he is to be condemned to persecution on account of these failings, we must also consider that he is little if any worse than the Robin or the Mocking-bird and when we enlist our thoughts in his favor, and consider his confident familiarity, his trim, graceful form, neat dress, bright, easy manners, and interesting song, we may readily forgive all his short-comings. Though distinguished by his song, which, notwithstanding its frequent interruption by imitations, is eminently original in style, it is, however, his manners which commend him most to our notice. There is scarcely an orchard in the land, from the Atlantic coast to the western base of the Rocky Mountains, and from the Gulf of Mexico to the British Provinces, which is not enlivened by the presence of one or more pairs of Catbirds; and very incomplete an American orchard would seem without them. At all hours of the day his cheerful song may be heard from among the green boughs of an apple-tree; and when the heat of the midday sun tells him that a bath would be refreshing, he comes and splashes in the wash-basin at the back-door in the most perfect civilized style. Then, when we return his familiarity and intrude upon his own household, we cannot but admire the courage with which he remonstrates and defends his home.

The song of the Catbird is one which, though vigorous and pleasing, is not universally admired. It has sufficient vigor, for he is untiring in his efforts to please; it has strength enough, for

FAMILY MOTACILLIDÆ.—THE WAGTAILS AND PIPITS.

"**CHAR.** Bill slender, conical, nearly as high as wide at the base, with slight notch at tip; the culmen slightly concave above the anterior extremity of the nostrils; short bristles at gape, which, however, do not extend forward to nostrils. Loral feathers soft and dense, but with bristly points; nasal groove filled with naked membrane, with the elongated nostrils in lower edge; the frontal feathers coming up to the aperture, but not directed forward nor overhanging it. Wings lengthened and sharp-pointed; the primaries nine (without spurious first), of which the first three to five, considerably longer than the succeeding, form the tip; the exterior secondaries generally much emarginated at the ends; the inner secondaries (so-called tertials) nearly equal to the longest primaries. The tail rather narrow, emarginate. Tarsi lengthened, scutellate anteriorly only, the hind claw usually very long, acute, and but slightly curved (except in *Motacilla*). Inner toe cleft almost to the very base, outer adherent for basal joint only."

"The combination of naked nostrils, notched bill, and nine primaries, with the tarsi scutellate anteriorly only, will at once distinguish the *Anthina* of this family from the *Audidæ*, which they closely resemble in coloration, habits, and lengthened hind claw. The lengthened, slightly curved hind claw, much pointed wings, emarginated secondaries, —the inner ones nearly as long as the primaries,—distinguish the family from the *Sylvicolidæ*,* with which, also, it has near relationships." (*Hist. N. Am. B.*)

A single genus, *Anthus*, with a rather strongly characterized sub-genus, *Neocorys*, occurs within the United States.

GENUS ANTHUS BECHSTEIN.

Anthus BECHST. *Gem. Naturg. Deutschl.* 1802. Type, *Alauda spinoletta* LINN.

Neocorys SCHL. P. Z. S. 1857, 5. Type, *Alauda spragueii* AUD.

GEN. CHAR. Bill slender, about half as long as the head, the culmen somewhat depressed or concave in the middle portion, or toward the base, the tip decurved and distinctly notched; rictus not distinctly notched. Tarsi distinctly scutellate, longer than the middle toe; hind toe about as long as the lateral toes, its claw very long and slender (as long as or longer than its digit), but decidedly curved. Wing much longer than the tail, the relative length of the primaries variable (according to the species), but first equal to the fourth, or longer, the fourth very much longer than the fifth; tertials much elongated, the longest never much shorter than the longest primaries, often longer. Tail emarginate or double-rounded, the intermediæ, however, always shorter than the lateral rectrices. Colors never bright, but usually different shades of brown or grayish, more or less distinctly streaked.

In their external appearance, the Titlarks, or Pipits, resemble very closely the true Larks, especially the typical genus, *Alauda*. The species average nearly the same in size, but are of more slender build, have the same brownish, streaked coloration, and also have the tertials and hind claw greatly developed. The analogy extends

*4. c. *Mniotiltidæ*.

of the warm springs, where the high temperature of the water kept the meadow soft and comparatively green, even during the coldest weather. In April, just before their departure for the North, they were observed in their more highly-colored spring plumage.

The Titlark breeds abundantly in the barren regions of the far north, from Labrador to Alaska, and on the bleak summits of the Rocky Mountains as far south at least as Colorado. The nest is built on the ground, and the eggs are so densely speckled with chocolate-brown as to sometimes appear uniformly of this color.

FAMILY MNIOTILTIDÆ.—THE AMERICAN WARBLERS.

The extensive and varied family of *Mniotiltidæ*, or "Warblers," constitutes a most attractive element of the North American *Ornis*. Next to the *Fringillidæ*, it is more numerous represented than any other, while it is even more characteristic, all the species being purely American, while the *Fringillidæ* are, as a family, cosmopolitan. With a few exceptions they are eminently migratory birds, the great bulk of them passing rapidly across the United States in spring, on the way to their northern breeding grounds, and in fall to their winter residence within the tropics; consequently, they are known to few except the close observer of bird-life, though in season they literally swarm where their insect food is most plentiful—always where the green leaves are, whether in lofty tree-top, vine-embowered coppice, or budding orchard. When the apple trees bloom, the warblers revel among the flowers, vieing in activity and in number with the bees; now probing the recesses of a blossom for an insect which has effected lodgment there, then darting to another, where, poised daintily upon a slender twig, or suspended from it, he explores hastily but carefully for another morsel. Every movement is the personification of nervous activity, as if the time for their journey was short; and, indeed, such appears to be the case, for two or three days at most suffice some species in a single locality; a day spent in gleaning through the woods and orchards of one neighborhood, with occasional brief siestas among the leafy bowers, then the following night in continuous flight toward its northern destination, is probably the history of every individual of the moving throng.

No group of birds more deserves the epithet of "pretty" than the warblers: Tanagers are splendid; Humming-birds are refulgent; other kinds are brilliant, gaudy or magnificent, but warblers alone are *pretty* in the proper and full sense of that term. One of the finest (*Dendroica maculosa*) is decked in richest yellow, deepest black, purest white and softest blue-gray, in elegant pattern and harmonious contrast; in another (*D. blackburniæ*) the intense cadmium-orange throat glows like a burning coal, so strong is the contrast

BIRDS OF ILLINOIS.

black upper parts; another (*D. virens*) has a coal-black line defined against the pure gamboge-yellow cheeks, the olive-green, the lower parts white. One of the most common appearance is the Hooded, or Mitred Warbler (*Sylvania*), the plumage of which is rich yellow beneath, olive green above, the head jet-black except on the sides, where it is rich yellow as the lower parts; the plumage is still further marked by white patches on the inner webs of the tail feathers, which are distinctly visible when the tail is spread. Without going into details, it may be remarked that a peculiar shade of olive-green has on this account been well termed "warbler-green," the color of the upper parts in the birds of this family, which are otherwise colored in the adult stage having more or less developed in the autumnal plumage of the

an arrangement, consistent with convenience of analysis, of this extensive family as the author is at present unable to give, is the following. The groups here recognized are not defined, but are hardly entitled to the rank of sub-

tail (sometimes even somewhat compressed), not abruptly bent at tip, but with a very distinct notch; rectal bristles weak, sometimes even (apparently)

2. Middle toe, with claw, not longer than tarsus.
 Bill without a distinct notch, or lacking it entirely; rictal bristles wanting, or very minute; culmen and gonys nearly straight; bill only very moderately compressed.
 - a. Middle toe and claw about equal to tarsus.
 Bill not acute; culmen and gonys decidedly convex; notch just perceptible; bristles apparent *Protonotaria*.
 Bill moderately acute, robust; no notch; culmen straight, its base elevated and slightly arched; bristles not apparent *Helinaia*.
 Bill moderately acute; robust; no notch; culmen convex, its base not elevated; bristles apparent *Helmitheros*.
 - b. Middle toe and claw considerably shorter than tarsus.
 Bill very acute, its outlines nearly straight; notch not perceptible; bristles not apparent *Helminthophila*.
 Bill very acute, its outlines nearly straight; notch just perceptible; bristles strong *Compsothlypis*.
 Bill distinctly notched; rictal bristles strong; outlines generally slightly curved *Dendroica*.
- b. *Geothlypæ*.
 3. Wings pointed, longer than nearly even tail.
 Above olive-brown; beneath white with dark streaks *Seiurus*.
 Above olive-green; beneath yellow without streaks *Oporornis*.
 4. Wings rounded, shorter than the graduated tail.
 Colors as in *Oporornis* *Geothlypis*.
- c. *Icteriæ*.
 5. Characters as given above; outer toe completely separated from the middle one; upper mandible decidedly deeper than the lower.
 Color above uniform olive-green or olive-gray; beneath rich yellow for anterior half, white posteriorly *Icteria*.
- d. *Setophagæ*.
 6. Bill decidedly "Tyrannine." Tail fan-shaped, equal to or longer than wing, decidedly rounded. Colors mainly black, orange-red, and white in the male, grayish, yellow, and white in the female *Setophaga*.
 7. Bill much less depressed, and with less strongly developed rictal bristles. Tail shorter and narrower (shorter than the wing), nearly even. Colors, plain olive-green or gray above, yellow beneath, with more or less of black about the head in the male (sometimes in the female also) *Sylvania*.

It is possible that of the above the *Icteriæ* should properly rank as a subfamily; but some tropical genera (e. g. *Granatellus* of Middle and South America and *Terrestris* of Cuba) appear to connect the only genus, *Icteria*, with the genus *Geothlypis*, through certain tropical species of the latter which have much stouter and more arched bills than the North American species. The connection between *Dendroica* and *Seiurus* is very nearly made in a West Indian species of the former (*D. plumbea* Lawr.) and the Antillean genus *Catharopeza*; the genera *Seiurus* and *Oporornis* differ more in coloration than anything else, while the differences in form between the type of the latter genus and that of *Geothlypis* are reduced to almost nil by the

with the jet-black upper parts; another (*D. virens*) has a coal-black throat, sharply defined against the pure gamboge-yellow cheeks, the back bright olive-green, the lower parts white. One of the most striking in appearance is the Hooded, or Mitred Warbler (*Sylvania mitrata*) the plumage of which is rich yellow beneath, olive green above, the head jet-black except on the sides, where it is rich yellow, the same as the lower parts; the plumage is still further varied by white patches on the inner webs of the tail feathers, which show distinctly when the tail is spread. Without going into further detail, it may be remarked that a peculiar shade of olive-green, which has on this account been well termed "warbler-green," is the usual color of the upper parts in the birds of this family, some species which are otherwise colored in the adult stage having this tint more or less developed in the autumnal plumage of the young.

As natural an arrangement, consistent with convenience of analysis, of the genera of this extensive family as the author is at present able to present, is the following. The groups here recognized are fairly well defined, but are hardly entitled to the rank of sub-families.

♂¹—Bill cylindrical (sometimes even somewhat compressed), not abruptly bent at tip and without very distinct notch; rictal bristles weak, sometimes even (apparently) quite obsolete.

♂. Size small (total length under 6.50 inches); bill slender and nearly cylindrical, the outlines nearly straight.

1. *Mniotiltæ* (*Wood Warblers*). Feet comparatively weak, not reaching, when outstretched, near to the end of the tail. Wing rather lengthened and pointed, considerably longer than the nearly even or slightly emarginated tail.

Cutebæ autumnæ

2. Middle toe, with claw, not longer than tarsus.

Bill without a distinct notch, or lacking it entirely; rectal bristles wanting, or very minute; culmen and gonys nearly straight; bill only very moderately compressed.

a. Middle toe and claw about equal to tarsus.

Bill not acute; culmen and gonys decidedly convex; notch just perceptible; bristles apparent *Protonotaria*.

Bill moderately acute, robust; no notch; culmen straight, its base elevated and slightly arched; bristles not apparent *Helinaia*.

Bill moderately acute; robust; no notch; culmen convex, its base not elevated; bristles apparent *Helmitheros*.

b. Middle toe and claw considerably shorter than tarsus.

Bill very acute, its outlines nearly straight; notch not perceptible; bristles not apparent *Helminthophila*.

Bill very acute, its outlines nearly straight; notch just perceptible; bristles strong *Compsothlypis*.

Bill distinctly notched; rectal bristles strong; outlines generally slightly curved *Dendroica*.

b. *Geothlypæ*.

3. Wings pointed, longer than nearly even tail.

Above olive-brown; beneath white with dark streaks *Seiurus*.

Above olive-green; beneath yellow without streaks *Oporornis*.

4. Wings rounded, shorter than the graduated tail.

Colors as in *Oporornis* *Geothlypis*.

c. *Icteriæ*.

5. Characters as given above; outer toe completely separated from the middle one; upper mandible decidedly deeper than the lower.

Color above uniform olive-green or olive-gray; beneath rich yellow for anterior half, white posteriorly *Icteria*.

d. *Setophagæ*.

6. Bill decidedly "Tyrannine." Tail fan-shaped, equal to or longer than wing, decidedly rounded. Colors mainly black, orange-red, and white in the male, grayish, yellow, and white in the female *Setophaga*.

7. Bill much less depressed, and with less strongly developed rectal bristles. Tail shorter and narrower (shorter than the wing), nearly even. Colors, plain olive-green or gray above, yellow beneath, with more or less of black about the head in the male (sometimes in the female also) *Sylvania*.

It is possible that of the above the *Icteriæ* should properly rank as a subfamily; but some tropical genera (e. g. *Granatellus* of Middle and South America and *Terretristis* of Cuba) appear to connect the only genus, *Icteria*, with the genus *Geothlypis*, through certain tropical species of the latter which have much stouter and more arched bills than the North American species. The connection between *Dendroica* and *Seiurus* is very nearly made in a West Indian species of the former (*D. plumbea* Lawr.) and the Antillean genus *Catharopeza*; the genera *Seiurus* and *Oporornis* differ more in coloration than anything else, while the differences in form between the type of the latter genus and that of *Geothlypis* are reduced to almost *nil* by the

intermediate species, *G. philadelphia* and *G. macgillivrayi*. The *Dendroica* pass by almost a gradual transition through *Perisoreglossa* very close to *Helminthophila*, while the latter genus stands not far from the allied genera *Helmitheros*, *Ictinia* and *Protonotaria*. No positive distinctions of habits obtain between members of the several groups as a whole; thus, the typical species of *Helminthophila*, those also of *Sylvania* and, the "*Oporornis*" *formosa* inhabit precisely the same localities, keeping near, and nesting on or near, the ground, and are therefore true "Ground Warblers" so far as habits are concerned. Some species of *Dendroica* (e. g. *D. rigorsii* and *D. dominica*) are "creepers," thus showing an analogy, at least, to *Mniotilta*. One species of this same genus (*D. palmarum*), walks gracefully upon the ground, with a delicate mincing step, and undulating wagging of the tail, much like the species of *Sciurus*, but still more like a Titlark (*Anthus*); some of them combine these various characteristics, to a greater or less degree, while others possess none of them to a pronounced extent. It will thus be seen, that while a classification of the family based upon technical characters is difficult, an arrangement by artificial considerations is infinitely more so.

GENUS **MNIOTILTA** VIEILLLOT.

Mniotilta VIEILLLOT, Analyse, 1816, 45. Type, *Motacilla varia* LINN.

GEN. CHAR. Bill rather long, compressed, shorter than the head, with very short narial bristles and a shallow notch. Wings considerably longer than the tail, which is slightly emarginate. Groundsucker that breeds in the marshes and swamps of the low country.

white. The *female* is not very different, except that the white markings are more or less soiled with brownish, the black is less intense, and the streaks on the sides indistinct.

Two races have been recognized, only one of which has been detected in Illinois (or indeed in any locality west of the Alleghanies), the typical form being restricted to the Atlantic coast and the West Indies.

Mniotilta varia (Linn.)

BLACK-AND-WHITE WARBLER.

Popular synonyms.—Black-and-white Creeper; Black-and-white Creeping Warbler; Striped Creeper.

a. varia.

Motacilla varia LINN. S. N. ed. 12, i, 1766, 333.

Sylvia varia LATH.—NUTT. Man. i, 1832, 384.

Certhia varia VIEILL. Ols. Am. Sept. 11, 1807, 69.—AUD. Orn. Biog. i, 1832, 452, pl. 90.

Mniotilta varia VIEILL. Analyse, 1816, 45.—AUD. Synop. 1839, 71; B. Am. II, 1841, 105, pl. 114.—NUTT. Man. 2d ed. i, 1840, 702.—BAIRD, B. N. Am. 1858, 235; Cat. N. Am. B. 1859, No. 167; Review, 1864, 167.—COUES. Key, 1872, 92; Check List, 1873, No. 57; 2d ed. 1892, No. 91; B. N. W. 1874, 45; B. Col. Val. 1878, 204.—B. B. & R., Hist. N. Am. B. i, 1874, 180, pl. 10, fig. 6.—RIDGW. Nom. N. Am. B. 1881, No. 74.

Certhia maculata WILS. Am. Orn. iii, 1811, 22, pl. 19, fig. 3.

Mniotilta varia var. *longirostris* BAIRD, B. N. Am. 1858, p. xxxi, No. 167.

b. borealis.

Mniotilta varia AUCT. (all western references).

Mniotilta borealis NUTT. Man. 2d ed. i, 1840, 705.

Mniotilta varia borealis RIDGW. Nom. N. Am. B. 1881, No. 74a.—COUES, 2d Check List, 1892, No. 92.

HAB. Eastern North America, west to eastern base of the Rocky Mountains, north to the fur countries; breeding throughout its range; in winter, both coasts of Mexico (north to Mazatlan) and Central America to Colombia, and throughout Greater Antilles.

SP. CHAB. *Adult male*: Above rather glossy blue-black, relieved by a broad medial crown-stripe of white, two white bands on the wing (formed by tips of middle and greater coverts), and white outer edges of tertials and of upper tail-coverts. Lores and auriculars black, separated from black stripes on sides of crown by a broad white superciliary stripe. Broad malar stripe and most of lower parts white; the sides broadly streaked with black, and the chin and throat more or less mixed with black—almost solid black in high-plumaged specimens. A large white spot on inner webs of two outer tail feathers, near end, and all the rectrices edged externally with bluish gray. Bill wholly deep black in summer, brownish black in winter; iris brown; legs and feet black (at least in summer). Total length about 5.25 inches, extent 8.75, wing (average) 2.80, tail 2.10, culmen .44, tarsus .63, middle toe .52. *Young male first autumn*: Similar to the adult, but whole throat immaculate white. Bill brownish black, the basal portion of the mandible lilaceous-white; feet dull olive, the claws olive-yellowish. *Adult female*: Similar to the male, but colors duller—the black less intense, and the white parts tinged with brownish; throat immaculate white. Size slightly less. *Young, first plumage*: Similar in general appearance to the adult female, but markings, especially the two stripes of the pileum and the streaks beneath, much less

across the river in pairs and alighting well up. On June 1st he had no trouble in seeing them and procuring specimens. They were occupied around the dead stumps, about ten feet from the ground. On the 8th of June he gave his attention to hunting for their nests, and found several. Young were found flying about June 15th. Mr. Coale says that "the Prothonotary Warbler is the most abundant summer resident of this locality, excepting perhaps the White-bellied Swallow and Redstart. Probably from forty to sixty pairs of the two former species were breeding within a distance of two miles." He regards the Kankakee as the northern limit of the breeding range of the species. He notes it as having been seen or taken in Cook county, however, near Chicago, in May 1883.

GENUS *HELINAIA* AUDUBON.

Helinaia AUD. Synopsis, 1839, 66. Type, *Sylvia ascaniaoni* AUD.

GEN. CH.* Bill nearly as long as the head, somewhat compressed, especially toward the culmen, which is elevated basally where it extends backward, as a rather prominent ridge well between the frontal apices.

This genus much resembles *Helmitheros* in general appearance, but differs in having a considerably longer and more compressed bill, the ridge of which is compressed, elevated, and appears to extend backwards on the forehead, as well as to be in a straight line with the upper part of the head. The wings are longer, the tail forked, not rounded; the feathers narrower and more pointed;

"The place which *Helinaia* should occupy in systematic lists is a somewhat puzzling question. Its long wings, large, flesh colored feet, and sluggish terrestrial habits indicate an affinity with *Oporornis*; its acute, compressed bill and short tarsi a perhaps stronger one with *Helmintherus*. In many respects it seems to form a connecting link between these two genera, with *Helmintherus* extending the change towards *Helminthophila*. Baird apparently held some such view in 1858, for he placed *Helmintherus* (in which he included *Helinaia*) between *Icteria* and *Helminthophila*, and *Oporornis* immediately before *Icteria*. Subsequently he separated *Helminthophila* still further from *Oporornis* by the intervention of the additional genera *Perissoglossa*, *Dendroica* and *Seiurus*, and later authorities have widened the gap still more. Leaving out of consideration the Cærebidæ, a troublesome family which seems to grade insensibly into the Sylvicolidæ through such genera as *Helminthophila* and *Perissoglossa*, our North American Sylvicolidæ might be very naturally arranged as follows: 1, *Mniotilta*; 2, *Dendroica* (including *Perissoglossa* and *Peucedramus* as sub-genera); 3, *Protonotaria*; 4, *Parula*; 5, *Helminthophila*; 6, *Helmintherus*; 7, *Helinaia*; 8, *Seiurus*; 9, *Oporornis*; 10, *Geothlypis*; 11, *Icteria*; 12, *Myiodiactes*; 13, *Setophaga*; 14, *Cardellina*; 15, *Ergaticus*; 16, *Basileuterus*. The Cærebidæ, however cannot be thus conveniently ignored, and the general subject is far too important and comprehensive to be discussed within the limits of the present paper." (BREWSTER, Auk, Jan., 1885, p. 79.)

Helinaia swainson Aud.

SWAINSON'S WARBLER.

Popular synonym.—Swainson's Swamp Warbler.

Sylvia swainsonii AUD. Orn. Biog. ii, 1831, 563, pl. 198.

Helinaia swainsonii AUD. Synop. 1839, 66; B. Am. ii, 1841, 83, pl. 104.

Helonæa swainsoni RIDGW. Nom. N. Am. B. 1881. No. 76.

Helmintherus swainsoni BAIRD, B. N. Am. 1858, 252; Cat. N. Am. B. 1859, No. 179; Review, 1864, 180.—COUES, Key, 1872, 93; Check List, 1873, No. 61; B. Col. Val. 1878, 212.—B. B. & R. Hist. N. Am. B. I, 1874, 190, pl. 10, fig. 9; iii, 1874, 504.

Helmintherus swainsoni COUES, 2d Check List, 1882, No. 97.

HAB. "Austroriparian Province," or Gulf States from South Carolina, Georgia and Florida to eastern Texas (Rice Co.); north, in Mississippi Valley to southern Illinois and southwestern Indiana? Cuba; Jamaica.

"SP. CHAR. (Adult ♂, breeding plumage, No. 8974, Coll. W. B., Charleston, South Carolina, May 1, 1881.) Crown and nape reddish brown; remainder of upper parts, including the sides of neck, clear olive, the wings, tail, and upper tail-coverts tinged with reddish

brown, under parts creamy white with a lemon-yellow tinge, most pronounced on the breast and abdomen faintest on the throat and crissum; sides of body brownish olive; sides of breast olivaceous ashy, extending completely across the breast in a broad but rather indistinct band of pale, nebulous spots; throat, abdomen and crissum immaculate; a dusky stripe starting at the lores (which are nearly black) passes backward along the side of the head intersecting the eye and separating a conspicuous, brownish white superciliary stripe from the region below the eye, which is dappled with a reddish brown on a creamy white ground. There is also a short, yellowish, concealed median stripe on the forehead. Iris hazel, legs and feet flesh-color (notes taken from freshly killed specimens).

"*Measurements*—L. 5.65; ex., 9.00; wing, 2.82; tail, 2.03; tar, .74; culmen from base, .70; from feathers, .61, from nostril, .42; depth of bill at ant. cor. of nostril, .18; width at same point, .13. Sexes indistinguishable.

"*Juv. first plumage*.—(2 No. 224, A. T. W., Charleston, June 9, 1884.) Wings and tail essentially as in the adult, abdomen dirty white; rest of plumage, including the crown, nape, back, rump, throat, breast, sides of head, neck and body, and the wing-coverts, nearly uniform dull cinnamon brown, without bands, spots or any other markings whatever, even on the head. Another specimen from the same brood, but apparently older, has the lores distinctly black, the light space on the abdomen nearly obscured by a brownish tipping on many of the feathers, and the general coloring lighter, approaching chocolate-brown in places.

"The above-described plumage is very odd and striking. In general coloring the bird seems to most nearly resemble the young of *Oporornis formosus*.* It differs so widely from the adult *H. swainsoni* that no one would suspect their identity were it not for the bill, which in the smallest specimen before me shows all the essential characteristics of the genus.

"*Juv. fall plumage*.—(3 No. 354, A. T. W., Charleston, Aug. 25, 1884.) Entire upper parts rich olive strongly tinged with reddish brown, the crown scarcely deeper colored than the back, the wings a trifle redder; loreal stripe blackish; superciliary stripe tinged with yellow; under parts strongly yellowish. Otherwise like the adult.

"*Variations*.—Among the adult and fall-plumaged young before me there is much variation in the size and shape of the bill, as well as in general coloration. Some examples have the upper and lower outlines of the bill nearly if not quite straight, in others the culmen is strongly curved, the gonys often with an appreciable angle. Again some specimens have the bill decidedly notched at the tip, although in the majority it is plain. As a rule (but not invariably) young birds seem to have a shorter, slenderer and straighter bill than do the adults.

*For most characters, same between the extremes. In the extreme, wings are

which I have seen is the yellow deeper than in a male taken May 5 (No. 9015, W. B). Adults in autumn are positively indistinguishable from breeding birds. Young in full autumnal dress may be generally, if not invariably, recognized by the darker color of the bill and the much more uniform coloration of the upper parts, the crown in some specimens being almost concolor with the back, wings, and tail, a condition never seen in spring birds.

"In markings the variations are trifling. The nebulous spotting on the breast is indistinct in many birds, and with a few barely appreciable, the ashy being practically confined to the sides, and the remainder of the upper parts immaculate. The yellow of the median stripe on the forehead is usually restricted to the bases of the feathers, but in a few specimens it extends to their tips, forming a conspicuous marking. In others again it is wholly wanting." (BREWSTER, Auk, January, 1885, p. 76-79.)

Further than the account given by Audubon, little was known until quite recently concerning the life-history of this bird. Even now its distribution is very imperfectly made out, but in all probability its range includes the lower South Atlantic States, the Gulf States and the lower Mississippi Valley in general, or from South Carolina and Florida to eastern Texas,* and north in the interior to southern Illinois and Indiana—everywhere in swampy districts only.

GENUS HELMITHEROS RAFINESQUE.

Helmitheros RAFINESQUE, Jour. de Phys. vol. 83, 1819, 417. Type, *Motacilla vermicivora* GMEL.—*Helmintherus* VON FRANTZIUS, Jour für Orn. 1869, 293.—*Helminthotherus* SALV. & GODM. Biol. Centr. Am. 1. 1880, 112.

GEN. CHAR. Bill large and stout, compressed, nearly or quite as long as the head. Culmen very slightly curved; gonyes straight; no notch in the bill; rictal bristles wanting. Tarsi short, but little, if any, longer than the middle toe and claw. Tail considerably shorter than the wings, rather rounded. Wings rather long, the first quill a little shorter than the second and third.

This genus comes near *Helinaia*, but differs in several important respects, which will be found detailed under that genus. The single species is very plainly colored, being uniform olive-green above and buff below, the head deep buff, relieved by two black stripes on the crown and a streak of the same behind the eye.

*See Bull. Nutt. Orn. Club, vol. vi., January, 1881, p. 55. (Navarro county.)

Helmitheros vermivorus* (Gmel.)*WORM-EATING WARBLER.**

Popular synonym.—Worm-eating Swamp Warbler

Molania vermivora GM. S. N. I. 1788, 951 (based on Edw. pl. 305).

Sylvia vermivora LATE.—WILS. Am. Orn. III. 1811, 74, pl. 24, fig. 4.—NUTT. Man. I. 1832, 409. AUD. Orn. Biog. I, 1832, 177; v. 1839, 460, p. 31.

Helminthia vermivora AUD. Synop. 1839, 60; B. Am. II, 1841, 80, pl. 105.

Helmitheros vermivorus BAIRD, B. N. Am. 1858, 252; Cat. N. Am. B. 1859, No. 178; Review, 1864, 179. COUES, Key, 1872, 93; Check List, 1873, No. 46, 2d ed. 1882, No. 96 ("Helmitheros"); B. N. W. 1874, 48, B. Col. Vol. 1878, 211, B. B. & R. Hist. N. Am. B. I, 1874, 187, pl. 10, fig. 19.

Helmintherus vermivorus VON FRANTZIUS, Jour. für Orn. 1869, 231.

Helminthothorus vermivorus SALV. & GODM. Biol. Centr. Am. I. 1880, 112.—RIDGW. Nom. N. Am. B. 1881, No. 77.

HAB. Eastern United States, chiefly south of 40°; north regularly to Connecticut Valley, casually to Maine, west to border of Great Plains. Wintering in Florida, Cuba, Jamaica, Yucatan, and Central America, south to Veragua.

SP. CHAR. *Adult (sexes alike):* Head buff, with a broad black stripe on each side of the crown (from nostrils to occiput), and a narrower black stripe behind the eye, along upper edge of the auriculars, continued, more or less distinctly, at the anterior angle of the eye. Upper parts plain olive-green. Lower parts buff, paler on chin, throat, abdomen, and crissum, where sometimes almost white. Upper mandible dark brown, the lower paler, iris dark brown; legs and feet pale brown in dried skins, pale brownish flesh-color in life. Wing, 2.65-2.90; tail, 1.90-2.20; culmen, .60-.65, tarsus, about .70. (Female averaging smaller than the male.)

Young, first plumage: Head, neck, and lower parts deep buff, the black stripes of the adult merely indicated by indistinct stripes of dull brown; back, scapulars, rump, and wing-coverts dull light brown, tinged with cinnamon, the greater coverts passing into deep buff terminally. Remiges and rectrices olive-green, as in the adult.

The buff of head-stripes, etc., is deeper in autumnal specimens.

Few of our Warblers are less conspicuous than the present species. Dull of color, retiring in disposition, and unusually shy (according

GENUS *HELMINTHOPHILA* RIDGWAY.

Helminthophaga CABAN. Mus. Hein. I, 1850, 20. Type, *Sylvia ruficapilla* WILS. (Not of BECHST. 1802.)

Helminthophila RIDGW. Bull. Nutt. Orn. Cl. vii, 1882, 53. Same type.

GEN. CHAR. Bill rather elongated (but shorter than the head), somewhat conical, very acute, the outlines nearly straight, but sometimes slightly decurved at the tip; no trace of notch at the tip, nor of bristles at the base. Wings long and pointed (decidedly longer than the moderately developed tail); the first quill nearly, sometimes quite, the longest. Tail nearly even, or slightly emarginate. Tarsi appreciably longer than the middle toe and claw.

The species are all of small size, being, with the exception of *Compsothlypis*, the smallest of the family. Most of them are brightly colored, at least one of them (*H. chrysoptera*) being one of the prettiest birds of the entire family. Including three somewhat doubtful forms, believed to be hybrids, eleven species are known, of which the following occur east of the Mississippi:

- a¹. Wing varied with white or yellow.
 - b¹. Wing with a large yellow patch covering both rows of coverts.
 - 1. *H. chrysoptera*. Forehead and both rows of wing-coverts yellow; upper parts bluish gray, lower parts white medially, bluish gray laterally. ♂: Lores, auriculars, and whole throat black. ♀: Lores, auriculars, and throat dull gray; yellow of forehead tinged with olive.
 - 2. *H. leucobronchialis*. Similar to *chrysoptera*, but whole throat pure white, even beneath the surface of the feathers; black on side of head limited to a narrow loreal and postocular streak; breast often tinged with yellow—sometimes bright yellow; sides usually but slightly or not at all tinged with grayish.
 - b². Wing with two white bands, formed by the tips of middle and greater coverts.
 - 3. *H. lawrencei*. Head and lower parts bright yellow, relieved by broad black stripe covering lores and auriculars and black throat, as in *H. chrysoptera*, the ♀ probably with these black markings dusky olive; upper parts olive-green, the wings and tail bluish gray, the former with two white bands.
 - 4. *H. pinus*. Similar to *H. lawrencei*, but whole throat bright yellow, like other lower parts, and black on side of head reduced to a narrow streak, as in *H. leucobronchialis*. ♀ similar to the ♂, but rather duller, the yellow of forehead less pure, and streak through eye dusky instead of black.
- a². Wing unvaried.
 - b². Two outer tail feathers with a large white patch near end of inner webs.
 - 5. *H. bachmani*. Above plain olive-green, forehead and lower parts yellow. ♂: Whole throat black; crown gray, bordered anteriorly by a black bar. ♀: Throat dusky olive; crown dull grayish olive, the black bar obsolete.
 - b³. Inner webs of tail feathers without white spots.
 - 6. *H. ruficapilla*. Above olive-green, the head grayish, with a whitish orbital ring; lower parts yellow. ♂: Crown with a concealed patch of chestnut. ♀: Similar to the ♂, but colors duller, the chestnut crown-patch less distinct (sometimes obsolete).
 - 7. *H. celata*. Above olive-green, beneath pale grayish yellow; crown with a concealed patch of orange-rufous, this less distinct in the female and quite obsolete in the young.

BIRDS OF ILLINOIS.

pinus. *Adult* ♂. Above olive-green, the head and neck ash-gray, colored crown-patch, but with a narrow dusky streak through the lower parts white. *Adult* ♀: Similar, but gray of head tinged with brown, and white of lower parts soiled with yellowish olive, especially on the neck. *Young*. Head and neck olive-green, like other upper parts; lower parts strongly tinged with olive-yellowish, the lower tail-coverts, however, are white.

illinoensis. Above olive-green, the forehead yellow, and crown blotched with black; rest of head, with whole lower parts, yellow, the side of head marked by a broad loreal and suborbital patch of black.

Helminthophila pinus (Linn.)

BLUE-WINGED WARBLER.

Blue-winged Yellow Warbler; Blue-winged Swamp Warbler.

S. N. ed. 12, 1, 1766, 187.

pinus BAIRD, B. N. Am. 1858, 254, Cat. N. Am. B. 1859, No. 180; Review, *Am. Orn.*, Key, 1872, 94; Check List, 1873, No. 63; 2d ed., 1882, No. 98, B. N. W. ed. Va., 1878, 214.—B. B. & R. Hist. N. Am. B. 1, 1874, 195, pl. 11, fig. 1.—*N. Am.* 1881, N. 79.

pinus RIDG. Bull. Nutt. Orn. Cl. vii, 1892, 53.

Am. Orn. ii, 1810, 109, pl. 15, fig. 4.—NUTT. Man. 1, 1832, 410.—AUD. 1832, 102, pl. 20.

Am. Orn. Synop. 1839, 69; B. Am. ii, 1841, 98, pl. 111.

United States, chiefly south of 46° and west of the Alleghanies; north, Massachusetts and Michigan, and west to border of the Great Plains. In Mexico and Guatemala.

Forehead, fore part of crown, cheeks, and entire lower parts (except the orange-yellow most intense on forehead, crissum and lining of

Helminthophila chrysoptera (Linn.)**GOLDEN-WINGED WARBLER.**

Popular synonyms.—Blue Golden-winged Warbler; Golden-winged Swamp Warbler.

Motacilla chrysoptera LINN. S. N. ed. 12, i, 1766, 333.

Sylvia chrysoptera LATH.—WILS. Am. Orn. ii, 1810, 113, pl. 15, fig. 5.—NUTT. Man. i, 1832, 411.—AUD. Orn. Biog. v, 1839, 154, pl. 414.

Helinaia chrysoptera AUD. Synop. 1839, 67; B. Am. ii, 1841, 91, pl. 107.

Helminthophaga chrysoptera CAB. Mus. Hein. i, 1850, 20.—BAIRD, B. N. Am. 1853, 255; Cat. N. Am. B. 1859, No. 181; Review, 1864, 175.—COUES, Key, 1872, 94; Check List, 1873, No. 63; 2d ed. 1882, No. 102; B. N. W. 1874, 49; B. Col. Val. 1878, 216.—B. B. & R. Hist. N. Am. B. i, 1874, 192, pl. 11, fig. 2.—RIDGW. Nom. N. Am. B. 1881, No. 81.

Helminthophila chrysoptera RIDGW. Bull. Nutt. Orn. Cl. vii, 1882, 53.

HAB. Eastern United States (chiefly north of 40° in summer) and Canada. Winters in Cuba, Central America and extreme northern portion of South America (Colombia).

SP. CHAR. *Adult* ♂: Forehead and fore part of crown rich gamboge-yellow; occiput, cervix, and other upper parts uniform bluish gray, relieved by a large patch of light gamboge-yellow covering both rows of wing-coverts; secondaries (including tertials) sometimes edged with olive-green; inner webs of three outer tail feathers marked with a large white patch, that on the exterior feather occupying the greater portion of the terminal two thirds. Lores, orbits, and auriculars deep black; below this, a pure white malar stripe, and above the auriculars a more or less distinct white streak, extending anteriorly to above the eye; chin, throat, and jugulum solid black, with a rounded posterior outline. Remaining lower parts pure white medially, bluish gray along sides. Bill deep black; iris brown. *In autumn*, similar, but black feathers of throat very narrowly margined with white, the yellow of forehead and blue-gray of back tinged with olive-green. *Adult* ♀: Similar to the ♂, but black of throat and auriculars replaced by dusky grayish, the yellow of forehead obscured by olive-green, and back usually tinged with the same.

Total length about 5 inches; wing 2.45-2.65; tail 1.90-2.25; culmen about .50; tarsus .70.

The southern limits of this species during the breeding season are not known with certainty. The writer is certain of having seen one or two individuals during a visit to Fox Prairie, in Richland county, in June, 1871, but whether they were breeding there he has no evidence further than the circumstance that all other species of the neighborhood were then nesting, while all which were unquestionably migrating had passed north at least two weeks before.* It has been found breeding abundantly in Stark county, Indiana, by Mr. H. K. Coale, who sends me the following interesting communication concerning his discovery:

"Each season reveals new and interesting facts in the study of the birds. On May 11th, 1884, in a woods on the Kankakee river, in Starke county, Indiana, I found the Golden-winged Warbler quite common. Five were shot and three others seen—all males, which were singing. Some were flushed from the ground and flew up to the nearest small tree, where they sat motionless next the trunk.

* Since the above was written, found breeding by the writer (in June, 1885) along the southern edge of Calhoun Prairie, in Richland county.

The locality was a moist situation, overgrown with young trees and bushes. Their short lisping note, repeated four times, was easily distinguished."

The Golden-winged Warbler is a common species during the spring migration in Wabash county, Illinois, and in adjacent counties of Indiana, and it is hardly, if at all, less rare in fall.

Helminthophila ruficapilla (Wils.)

JASHVILLE WARBLER.

Sylvia ruficapilla WILS. Am. Orn. III, 1811, 120, pl. 27, fig. 3.—AUD. Orn. Blog. I, 1832, 450, pl. 89.

Helminthophaga ruficapilla BAIRD, B. N. Am. 1858, 256; Cat. N. Am. B. 1859, No. 193, Review, 1864, 175.—COOPER, Key, 1872, 94; Check List, 1873, No. 67; 2d ed. 1882, No. 106; B. N. W. 1874, 50; B. Col. Val. 1878, 224.—B. B. & R. Hist. N. Am. B. I, 1874, 196, pl. 11, fig. 7. RIDGW. Nom. N. Am. B. 1881, No. 85.

Helminthophila ruficapilla RIDGW. Bull. Nutt. Orn. Club, VII, 1882, 54.

Sylvia rubricapilla WILS. Am. Orn. VI, 1812, 15 (index).—NUTT. Man. I, 1832, 412.

Helinaia rubricapilla AUD. Synop. 1839, 70; B. Am. H. 1841, 103, pl. 113.

HAB. Nearly the whole of North America, but rather irregularly distributed in the West, breeding on higher mountain ranges within the United States (south in the Sierra Nevada to at least 38°*), but chiefly northward (south to Massachusetts). Winters chiefly in Mexico. Casual in Greenland.

"SP. CHAR. Head and neck above and on sides ash-gray, the crown with a patch of concealed dark brownish-orange hidden by ashy tips to the feathers. Upper parts olive-green, brightest on the rump. Under parts generally, with the edge of the wing, deep yellow; the anal region paler, the sides tinged with olive. A broad yellowish white ring round the eye; the lores yellowish; no superciliary stripe. The inner edges of the tail-feathers margined with dull white. Female similar, but duller; the under parts paler and with more white; but little trace of the red of the crown. Length, 4.65; wing, 2.42; tail, 2.05." (Hist. N. Am. B.)

and Summer Yellow Warblers (*Dendroica pennsylvanica* and *D. æstiva*), and is therefore very different from that of its Blue-winged Yellow and Golden-winged congeners.

Helminthophila celata (Say).

ORANGE-CROWNED WARBLER.

Sylvia celata SAY, Long's Exp. i, 1823, 169.—NUTT. Man. i, 1832, 413.—AUD. Orn. Biog. ii, 1834, 449.

Vermivora celata NUTT. Man. 2d ed. 1840, 473.

Helinaia celata (part) AUD. Synop. 1839, 69; B. Am. ii, 1841, 100.

Helminthophaga celata (part) BAIRD, B. N. Am. 1853, 257; Cat. N. Am. B. 1859, No. 184; Review, 1864, 176.—COUES, Key, 1872, 95; Check List, 1873, No. 68; 2d ed. 1882, No. 107; B. N. W. 1874, 52; B. Col. Val. 1878, 226.—B. B. & R. Hist. N. Am. B. i, 1874, 202, pl. 11, fig. 5.—RIDGW. Nom. N. Am. B. 1881, No. 86.

Helminthophila celata RIDGW. Bull. Nutt. Orn. Club, vii, 1882, 54.

HAB. Interior of North America, breeding in the Rocky Mountain region and northward to the Yukon region of Alaska; in winter migrating through the Mississippi Valley and westward to the Great Basin; very rare, during migrations, in Atlantic States. Wintering along southern border of United States and in Mexico. (Replaced along Pacific coast, from the Alaskan peninsula southward, by a brighter-colored race, *H. celata lutescens*, and in the South Atlantic States by the dark-colored *H. celata obscura*; the latter possibly breeding in the higher Alleghanies.

"SP. CHAR. Above grayish olive-green, rather brighter on the rump. Beneath entirely greenish yellowish-white, except a little whitish about the anus; the sides tinged with grayish olivaceous. A concealed patch of pale orange-rufous on the crown, hidden by the grayish tips to the feathers. Eyelids and an obscure superciliary line yellowish white, a dusky obscure streak through the eye. Inner webs of tail feathers broadly edged with white. *Female* with little or none of the orange on the crown, and the white edgings to inner webs of tail feathers. *Young* lacking the orange entirely, and with two fulvous-whitish bands on the wing. Length, 4.70; wing, 2.25; tail, 2.00."

During the seasons of migration, this species is occasionally common, but some years appears to be very rare if not wanting altogether. It possesses no special characteristic of habits or song, in which respects it resembles the other members of the genus. The writer found it a very abundant species during autumn in the mountains of Nevada and Utah, and a rather common bird in the higher woods of the Wahsatch Mountains, where it was breeding. Its summer home extends far northward, even to the shores of the Arctic seas, and it breeds abundantly throughout the Yukon Valley in Alaska, quite to the shores of Norton Sound, and thence eastward to the McKenzie River district, from which region numerous nests have been received at the National Museum.

* Average of five adult males: wing, 2.50; tail, 2.04; culmen, .41; tarsus, .42.

Average of two adult females: wing, 2.34; tail, 1.98; culmen, .40; tarsus, .64.

Helminthophila peregrina (Wils.)**TENNESSEE WARBLER.**

Sylvia peregrina WILS. Am. Orn. Ill. 1811, 83, pl. 35, fig. 2.—NUTT. Man. 1, 1832, 412.—AUD. Orn. Biog. II, 1834, 397, pl. 154.

Sylvicola Vermivora peregrina SW. & RICH. Faun. Bor. Am. II, 1831, 231, pl. 42.

Vermivora peregrina NUTT. Man. 2d ed. 1, 1840, 469.

Helminthophila peregrina AUD. Synop. 1839 65, B. Am. II, 1841, 96, pl. 110.

Helminthophila peregrina CAB. BAIRD, B. N. Am. 1853, 258; Cat. N. Am. A. 1859, No. 186;

Review, 1865, 178.—COUES, Key, 1872, 95, Check List, 1873, No. 69; 2d ed. 1882, No. 109;

B. N. W. 1874, 53; B. Col. Val. 1878, 240. B. B. & B. Hist. N. Am. B. I. 1874, 305, pl.

II, figs. 10, 11. RIDGW. Nom. N. Am. B. 1881, No. 87.

Helminthophila peregrina RIDGW. Bull. Nutt. Orn. Cl. VII, 1882, 54.

HAB. Eastern North America, west to eastern base of Rocky Mountains (El Paso Co., Colorado, Sept. 1, 1873; C. E. Aiken); breeding from northern border of United States to the Arctic regions; winters in Cuba and Middle America and south to Colombia.

SP. CHAR. Top and sides of the head and neck ash-gray; rest of upper parts olive-green, brightest on the rump. Beneath dull white, faintly tinged in places, especially on the sides, with yellowish olive. Eyelids and a stripe over the eye whitish; a dusky line from the eye to the bill. Outer tail-feather with a white spot along the inner edge near the tip. *Female* with the ash of the head less conspicuous; the under parts more tinged with olive-yellow. Length, 4.50; wing, 2.75; tail, 1.85.

"Autumnal specimens and young birds are sometimes so strongly tinged with greenish yellow as to be scarcely distinguishable from *H. celata*. The wing is, however, always longer and the obscure whitish patch on the inner edge of the exterior tail-feather, near its tip, is almost always appreciable. In *celata* this edge is very narrowly and uniformly margined with whitish.

"A young bird of the year, from Fort Simpson (27,229), has two distinct greenish white bands on the wings, and the forehead and cheeks greenish yellow. A corresponding age of *H. celata* has the wing-bands more reddish brown, the wings shorter, and no white patch on the outer tail-feather." (*Hist. N. Am. B.*)

Autumnal specimens usually have the primaries narrowly but distinctly tipped with white, and on 2d primary show traces of white on 10th and 11th great wing coverts.

Warbler, this species breeds abundantly in the extreme north, being particularly numerous in the McKenzie River district; but it is apparently wanting to the Alaskan fauna. The southern portion of its breeding range includes the northern shores of the Great Lakes and a considerable portion of New England, including parts of Massachusetts. Its nest, like that of other species of its genus, is built on the ground. The song is said to resemble that of the Nashville Warbler, except that it is shriller.

GENUS COMPSOTHTYPIS CABANIS.

Parula BONAP. Geog. & Comp. List, 1838, 20. Type, *Parus americanus* LINN. (Not *Parulus* SPIX, 1824.)

Compsothlypis CABANIS, Mus. Hein. i, 1850, 20. (Same type.)

"GEN. CHAR. In the species of this genus the bill is conical and acute; the culmen very gently curved from the base; the commissure slightly concave. The notch when visible is further from the tip than in *Dendroica*, but usually is either obsolete or entirely wanting. Bristles weak. The tarsi are longer than the middle toe. The tail is nearly even, and considerably shorter than the wing. Color, blue above, with a triangular patch of green on the back; anterior lower parts yellow." (*Hist. N. Am. B.*)

Compsothlypis americana (Linn.)

PARULA WARBLER.

Popular synonyms.—Particolored Warbler; Blue Yellow-backed Warbler.

Parus americanus LINN. S. N. ed. 10, i, 1758, 190.

Sylvia americana AUD. Orn. Biog. i, 1832, 78, pl. 15.

Sylvicola americana AUD. Synop. 1839, 59; B. Am. ii, 1841, 57, pl. 91.

Parula americana BONAP. Comp. List, 1838, 20.—BAIRD, B. N. Am. 1858, 238; Cat. N. Am. B. 1859, No. 168; Review, 1865, 169.—COUES, Key, 1872, 92; Check List, 1873, No. 53: 2d ed. 1882, No. 93; B. N. W. 1874, 46; B. Col. Val. 1878, 208.—B. B. & R. Hist. N. Am. B. i, 1874, 208, pl. 10, fig. 7.—RIDGW. Nom. N. Am. B. 1881, No. 88.

Compsothlypis americana CAB. Mus. Hein. i, 1851, 20.

Sylvia pusilla WILS. Am. Orn. iv, 1811, 17, pl. 28, fig. 3.

HAB. Eastern United States and British Provinces, breeding throughout, or from Gulf coast northward; in winter, most of the West Indies, Mexico, and Guatemala; also in Florida (and along Gulf coast). West to eastern base of Rocky Mountains (El Paso Co., Colorado, May; C. E. Aiken).

SP. CHAR. Two bands on the wing-coverts, and spots on inner webs of two or three outer tail-feathers, just before the end, white; breast yellow; back greenish; abdomen and crissum white. *Adult ♂*: Above grayish blue, with a triangular patch of olive-green on the back; throat and breast yellow, with more or less of dusky, and sometimes also of orange-rufous, across the jugulum. *Adult ♀*: Similar, but colors duller, the blue above obscured with a greenish wash and the yellow beneath paler and more soiled.

First plumage: male. Remiges, rectrices, etc., as in the adult. Pileum, cervix, rump and upper tail-coverts dull gray tinged with olive anteriorly and with blue posteriorly

the back with more or less of an indistinct patch of olive-green; throat and eyelids grayish white; abdomen, anal region, and crissum pure white; jugulum and sides of breast pale ash-gray. From two specimens obtained at Mt. Carmel, Ill., July 17, 1871. Both of these show a large patch of bright gamboge-yellow on the breast, these feathers denoting the commencement of the adult plumage. One of them also has the chin and an indistinct supralateral line tinged with yellow.

'Autumnal males are browner on the chin, yellower on the throat and jugulum. Head tinged with greenish; secondaries edged with greenish yellow. Autumnal females are light greenish olive above, dirty white beneath.

'In very brightly colored spring males, there is frequently (as in 58,335, Philadelphia) a well defined, broad blackish band across the jugulum, anterior to an equally distinct and rather broader one across the breast, of a brown tint, spotted with black, while the sides are much spotted with chestnut-brown; the blue above is very pure, and the green patch on the back very sharply defined." *Hist. N. Am. B.*

This pretty little warbler is abundant during the migrations, and is also not uncommon in swampy forests during summer, when it inhabits chiefly those woods where the long gray lichens (*Usnea*) are abundant on the trunks and branches of the trees. In these long beard-like tufts it constructs its nest, which is so artfully concealed that only the actions of the owners can reveal its location.

GENUS DENDROICA GRAY.

Dendroica GRAY, List of Gen. and Subg. B. 2d ed. Appendix, 1842, 8. Type, *Mniotilta coronata* LINN.

The essential characters of this genus, as here enlarged, have been given on page 115. Therefore, we will in this place give the

slightly concave. Tongue lengthened, narrow, deeply bifid (for one third), and deeply lacerated or fringed externally at the end; the edge along the median portion folded over on the upper surface, but not adherent." (*Hist. N. Am. B.*)

The curvature of the bill in *Perissoglossa tigrina* is quite peculiar among the *Mniotiltidæ* with notched bills, with the single exception of *Helminthophila bachmani*.

It seems likely that the *Helinaia carbonata* of Audubon belongs here, as it appears very closely allied to the type of this subgenus. The two species differ, however, as follows:—

COMMON CHARACTERS. *Male.* Top of head black. Above olive, becoming yellowish on rump. Head, neck, and lower parts bright yellow, becoming whitish posteriorly. Dorsal feathers with black centres; breast and sides streaked with black. A black streak through the eye.

P. tigrina. Large white patches on inner webs of tail feathers.

Sides of head and middle of throat tinged with chestnut. One large white patch on wing, covering both rows of coverts. Outer web of lateral tail-feather blackish.

P. carbonata. No white patches on tail feathers.

No chestnut about head. Two bands on the wing, the anterior one white, the posterior yellow. Outer web of lateral tail-feather whitish.

Dendroica tigrina (Gmel.)

CAPE MAY WARBLER.

Motacilla tigrina GMEL. S. N. i, 1788, 985 (based on EDWARDS, pl. 257).

Dendroica tigrina BAIRD, B. N. Am. 1858, 286; Cat. N. Am. B. 1859, No. 206.—COUES, Key, 1872, 102; Check List, 1878 No. 85; 2d ed. 1882, No. 126; B. Col. Val. 1878, 245.

Perissoglossa tigrina BAIRD, Review, 1865, 181.—B. B. & R. Hist. N. Am. B. i, 1874, 212, pl. 12, figs. 1, 2.—RIDGW. Nom. N. Am. B. 1881, No. 90.

Sylvia maritima WILS. AM. ORN. vi, 1812, 99, pl. 54, fig. 3.—AUD. ORN. Biog. v, 1839, 156, pl. 414.—NUTT. Man. i, 1832, 371.

Sylvicola maritima JARD.—AUD. Synop. 1839, 56; B. Am. ii, 1841, 44, pl. 85.—NUTT. Man. 2d ed. i, 1840, 424.

HAB. Eastern North America, north to Hudson's Bay and Lake Winnipeg; breeding chiefly north of the United States and wintering in the West Indies, where resident in Jamaica.

"SP. CHAR. Bill very acute, conical and decidedly curved. Bill and feet black. Upper part of head dull black, some of the feathers faintly margined with light yellowish brown. Collar scarcely meeting behind, rump and under parts generally rich yellow. Throat, forepart of breast, and sides streaked with black. Abdomen and lower tail-coverts pale yellow, brighter about the vent. Ear-coverts light reddish-chestnut. Back part of a yellow line from nostrils over the eye of this same color; chin and throat tinged also with it. A black line from commissure through the eye, and running into the chestnut of the ear-coverts. Back, shoulders, edges of the wing and tail, yellowish olive; the former spotted with dusky. One row of small coverts, and outer bases of the secondary coverts, form a large patch of white, tinged with pale yellow. Tertiaries rather broadly edged with brownish white. Quills and tail dark brown, the three outer feathers of the latter largely marked with white on the inner web; edge of the outer web of the outer feathers white, more perceptible towards the base. Length, 5.25; wing, 2.84; tail, 2.15.

"*Female*. Above olivaceous-ash, most yellowish on rump; no black nor chestnut on head. Wing-coverts inconspicuously edged with whitish. Tail spots very inconspicuous. Beneath dull white tinged with yellowish on the breast, and streaked as in the male, but with dusky grayish instead of black." (*Hist. N. Am. B.*)

"*First plumage female*. Remiges, rectrices, and primary coverts as in adult. Pileum, nape, rump, and upper tail-coverts dark slaty-brown, the back with an indistinct patch of olive-green. Eyelids, throat, jugulum, and sides of breast dark slate; abdomen, anal region, and crissum soiled white, tinged with dull yellow. From a specimen in my collection shot at Upton, Me., August 21, 1874. This bird exhibits a few irregular patches and isolated feathers of dull yellow on the breast and throat, forerunners of the fall plumage." (*BEEWESTER, Bull. Nutt. Orn. Club Apr. 1878, p. 69.*)

"The chestnut about the head in adult males varies in amount with the individual; sometimes (as in 20,633, May, Moose Factory, Hudson's Bay Territory) there is an oblong spot of chestnut in the middle of the crown, but generally this is absent. Very frequently the chestnut tinges the throat. All variations in these respects appear, however, to be individual, and not dependent at all on locality. West Indian specimens appear to be absolutely identical with those from North America.

"Autumnal specimens are browner, the chestnut markings much obscured." (*Hist. N. Am. B.*)

This was until within comparatively a few years a rare bird, whose habits were by no means well known. It passes through Illinois during its migrations, but does not, so far as known, remain to breed, although in the mountainous portions of Hayti and Jamaica and perhaps others of the Greater Antilles, it is a permanent resident; thus having a very peculiar distribution, like the Yellow rumped Warbler (*Dendroica coronata*) and possibly other members of the family.

With the exception of two, which were taken in an orchard (when the apple-trees were in bloom), all the specimens of this species secured by the writer were shot from tall tree-tops, the height being

Subgenus *Dendroica* Gray.

Dendroica GRAY, Genera Birds, Appendix, 1842, 8. Type, *Motacilla coronata* LINN.

"GEN. CHAR. Bill conical, attenuated, depressed at the base, where it is however scarcely broader than high, compressed from the middle. Culmen straight for the basal half, then rather rapidly curving, the lower edge of upper mandible also concave. Gonyes slightly convex and ascending. A distinct notch near the end of the bill. Bristles, though short, generally quite distinct at the base of the bill. Tarsi long, decidedly longer than the middle toe, which is longer than the hinder one; the claws rather small and much curved; the hind claw nearly as long as its digit. The wings long and pointed the second quill usually a very little longer than the first. The tail slightly rounded and emarginate."

"Colors. Tail always with a white or yellow spot; its ground color never clear olive-green; in *D. æstiva* edged internally with yellow.

"Eggs usually with a white or a bluish white ground, marked with purplish brown and obscure lilac; in some, mingled with varying shades of sienna-brown. Nest, so far as known, in bushes and trees, except *D. palmarum*, which is on the ground.

"The genus *Dendroica* is one of the most extensive as to species of any in North America, and scarcely admits of any subdivision. There is a little variation in the bill, wings, etc., the chief peculiarities being in *D. castanea* and *pennsylvanica*, in which the bill is broader, and more depressed, with longer bristles; in *D. striata*, where the bill is narrow with scarcely any bristles; and in *D. palmarum* and *kirtlandi*, where the wings are very short, scarcely longer than the tail. *D. palmarum* has the tarsus unusually long. The colors in all are strongly marked, and the species are among the most beautiful of all belonging to our fauna, and are the most conspicuous for their numbers and in their migrations." (*Hist. N. Am. B.*)

The difference in manners between certain members of this genus is remarkable; thus, the *D. palmarum* is very terrestrial in its habits, walking upon the ground with the ease and grace of a Titlark (*Anthus*), and, like these birds, it has a wagging motion of the tail. On the other hand, the *D. dominica* and *D. vigorsii* are "Creepers" almost to the same extent as is the *Mniotilta varia*; creeping not only along the branches of trees, but the cornices and lattices of buildings, with the facility of a Nuthatch (*Sitta*). Both these species, however, may often be seen hopping among the foliage of the trees, now and then snapping an insect on the wing, in the manner of others of the family.

Synopsis of Species.

A. Inner webs of lateral tail-feathers with a patch or distinct edging of yellow.

1. *D. æstiva*. ♂: Gamboge-yellow, more olive-green above, the breast and sides streaked with chestnut-red. ♀: Duller, lacking distinct red streaks below.
Young: Dull olive-green above, plain pale yellow, or greenish buffy white, below.

B. Inner webs of lateral tail-feathers with patch or distinct edging of white.

- a. Wing without light markings, except a white spot at base of primaries (sometimes obsolete in ♀).
2. *D. cerulescens*. ♂: Above plain dark dull blue; sides of head and neck, throat, and sides, black; belly white. ♀: Above dull grayish green, below dull pale greenish buff.
- b. Wing with one or two distinct bands across coverts.
3. *D. virens*. ♂: Above bright olive-green; wing with two white bands; sides of head gamboge-yellow; chin, throat, jugulum and sides of breast, deep black; belly white. ♀: Similar, but black of throat, etc., broken by admixture of yellow and whitish. *Young in fall and winter*: Throat, etc., mostly pale yellowish.
4. *D. striata*. Crissum pure white at all stages and seasons. ♂: Pileum uniform deep black; upper parts grayish, streaked with black, the wings with two white bands; lower parts pure white, the sides of the throat with a series of blended black streaks, uniting on chin. ♀: Above dull olive-green, everywhere streaked with black; beneath whitish, more or less tinged anteriorly with greenish buff, the sides (and sometimes sides of throat) streaked with dusky. *Young in fall and winter*: Above olive-green, more or less streaked, especially on back, with dusky; beneath pale olive-yellowish, the crissum, however, always pure white.
5. *D. castanea*. Crissum always pale creamy buff. ♂: Crown, throat and entire sides chestnut, darkest on the first; above grayish, streaked with black, the wing with two white bands; sides of neck and whole body pale buff, or buffy white. ♀: Somewhat similar, but chestnut wanting, or merely indicated, the crown streaked like the back. *Young in fall and winter*. Similar to corresponding stage of *striata*, but crissum pale buff, the upper tail-coverts and tail tinged with bluish gray, flanks sometimes (in males chiefly) tinged with chestnut.
6. *D. pennsylvanica*. Wing-bands sulphur-yellow, throat pure white; crown yellow or grass-green; auriculars white or light gray. ♂: Sides, continuously, rich chestnut, connecting anteriorly with a black cheek-patch; crown bright yellow; back streaked with black and greenish yellow. ♀: Similar to the ♂, but duller. *Young in fall and winter*: Above nearly plain bright olive-green, including whole top of head; side of head ash-gray; lower parts plain white, more grayish laterally, where sometimes tinged with chestnut on the flanks.
7. *D. cerulea*. ♂: Above fine grayish blue, with black streaks on back and along sides of crown; wing-bands pure white; lower parts pure white, interrupted by a grayish blue jugular band or collar. ♀: Above grayish green, glossed with blue; beneath light greenish buff, without jugular collar. *Young* ♂: Similar to adult ♀.

bands; sides of head black, with a supraloral and postocular streak of white; breast, especially next the yellow patches, heavily spotted or blotched with black. ♀: Similar to the ♂, but much duller, less bluish above, the streaks on breast much narrower. *Autumnal and winter plumage (adult and young)*: Upper parts brownish, and white of lower parts obscured by a wash of the same; streaks on breast indistinct or obsolete, and yellow patches much reduced in size. *Young, first plumage*: No yellow, except sometimes on rump; whole plumage thickly streaked above and below, with dusky and grayish white.

11. *D. dominica*. *Adult (sexes alike)*: Above bluish gray, the back without streaks; superciliary stripe and sides of neck white, the former sometimes yellow anteriorly; lores and cheeks black, this extending downward to sides of throat in a triangular patch; whole throat clear yellow; rest of lower parts white, the sides streaked with black. *Young*: Similar, but upper parts tinged with brownish, white of lower parts soiled with the same, yellow of throat duller, and markings of head less sharply defined.
12. *D. vigorsii*. Wing-bands dull gray or grayish white. ♂: Above olive-green, the wings and tail grayish; beneath yellow, the sides indistinctly streaked with olive; the anal region and crissum (sometimes belly also) white. ♀: Above dull olive-gray, sometimes tinged with olive-green; beneath pale grayish, fading into white posteriorly, the breast usually tinged with yellow. *Young, first plumage*: Nearly like the adult ♀, and wholly unstreaked.
13. *D. montana*. Similar to *pinus*, but forehead, superciliary stripe, auriculars, and anal region yellow, and breast streaked with dusky.
14. *D. discolor*. ♂: Above olive-green, the back spotted with reddish chestnut; lower parts rich gamboge-yellow, the sides broadly streaked with black; wings with only one distinct band, this a pale yellow one across tips of middle coverts. ♀: Similar but somewhat duller.
- c. *Wing without any distinct bands or other markings*.
15. *D. palmarum*. Above olive-brown, beneath yellowish. *Adult* with the crown chestnut.
 - a. *palmarum*. Yellow of lower parts confined chiefly to throat and crissum, the belly whitish, or only slightly tinged with yellow; jugulum narrowly streaked with dusky; back dull olive-brown.
 - b. *hypochrysea*. Lower parts wholly yellow; sides of breast broadly streaked with reddish chestnut; back greenish olive.
16. *D. kirtlandi*. *Adult (sexes alike)*: Above bluish gray, the crown streaked, and the back spotted with black; lower parts pale sulphur-yellow, sides tinged with grayish and streaked with black, the jugulum sometimes finely and sparsely dotted with the same; side of head blackish, the eyelids white.

Dendroica æstiva (Gmel.)

YELLOW WARBLER.

Popular synonyms.—Summer Yellow-bird; Wild Canary; Yellow-poll Warbler.

Motacilla æstiva Gmel. S. N. i, 1788, 996.

Sylvia æstiva Lath.—Aud. Orn. Biog. i, 1831, 476, pl. 95.—Nutt. Man. i, 1832, 370.

Sylvicola æstiva Sw. & Rich. F. B. A. ii, 1831, 211.—Aud. Synop. 1839, 58; B. Am. ii, 1841, 50, pl. 38.—Nutt. Man. 2d ed. i, 1840, 417.

Dendroica æstiva Baird, B. N. Am. 1858, 282; Cat. N. Am. B. 1857, No. 203; Review, 1865, 195.—Cov. Key, 1872, 97; Check List, 1873, No. 70; 2d ed. 1882, No. 111; B. N. W. 1874, 54, 232; B. Col. Val. 1878, 252.—B. B. & R. Hist. N. Am. B. i, 1874, 222, pl. 14, fig. 1.—Ridgw. Nom. N. Am. B. 1881, No. 93.

Sylvia citrinella WILS. Am. Orn. ii, 1810, 111, pl. 15, fig. 5.

Sylvia childreni AUD. Orn. Biog. i, 1831, 180, pl. 35.—NUTT. Man. i, 1832, 270.

Sylvia rathbonia AUD. Orn. Biog. i, 1831, 333, pl. 65.

Sylviicola rathbonii AUD. Synop. 1839, 58; B. Am. ii, 1841, 53, pl. 99.

HAB. The whole of North America (to the limit of willow growth), breeding throughout its range. In winter, the whole of Middle America and northern South America (Trinidad, Tobago, Colombia, etc.), but not in West Indies, where replaced by allied species.

SP. CHAR. *Adult* : Head (except occiput) and entire lower parts pure rich gamboge-yellow, the forehead and crown less pure—often obscured by an olive-green wash, more rarely intensified by an orange tinge; breast and sides broadly streaked with rich chestnut-rufous. Upper parts olive-green, the back sometimes narrowly streaked with dark chestnut, the lower rump and upper tail-coverts more tinged with yellow. Wing feathers blackish dusky centrally, but all margined, more or less broadly with olive-green or yellow, the middle coverts broadly tipped, the greater coverts and tertials broadly edged with nearly pure yellow. Tail feathers dusky, the inner webs of all mostly pure yellow. Bill black; iris brown; legs and feet olive-brownish.

No bird of North America has so extensive a range, or so general a distribution, as the Summer Yellow-bird, who appears equally at home in the subtropical lands along the Gulf coast, and the shores of the Arctic Ocean; while it is no less numerous in the parched valleys of California and Arizona than in the humid districts of the Atlantic watershed. One of the most abundant of our summer birds, it is also one of the most familiar, inhabiting, as it does, the shade trees along the streets and in the parks of the largest cities, and the orchards of the rural districts. Few of our birds are more attractive in plumage or song. In some large poplars on the opposite side of the street from my residence in Washington, a pair of these birds took up their abode, the male singing through the season during certain hours, with great regularity. On

Dendroica cærulescens (Linn.)

BLACK-THROATED BLUE WARBLER.

Popular synonyms.—Canadian Warbler; Pine Swamp Warbler.

- Motacilla canadensis* LINN. S. N. ed. 12, 1, 1766, 336 (not of p. 334, which=*D. coronata*)
Sylvia canadensis WILS. Am. Orn. II, 1810, 115, pl. 15, fig. 7.—NUTT. Man. 1, 1832, 398.—
AUD. Orn. Biog. II, 1834, 309, pls. 148, 155.
Sylvicola canadensis RICH.—AUD. Synop. 1839, 61; B. Am. II, 1841, 63, pl. 95.
Dendroica canadensis BAIRD, B. N. Am. 1858, 271; Cat. N. Am. B. 1859, No. 193.
Motacilla cærulescens GMEL. S. N. 1, 1788, 960.
Dendroica cærulescens BAIRD Review, 1865, 186.—B. B. & R. Hist. N. Am. B. I, 1874, 254,
pl. 12, figs. 10, 12.—COUES, Key, 1872, 99; Check List, 1873, No. 76; 2nd ed. 1882, No.
117; B. N. W. 1874, 45; B. Col. Val. 1878, 241.—RIDGW. Nom. N. Am. B. 1881, No. 94.
Sylvia sphagnosa BONAP. Jour. Phila. Ac. IV, 1824, 199 (= ♀).—NUTT. Man. 1, 1832, 406.—
AUD. Orn. Biog. II, 1834, 279.
Sylvia pusilla WILS. Am. Orn. V, 1812, 100, pl. 43, fig. 4 (= ♀; not of vol. IV, p. 17, pl. 28, fig.
3, which=*Compsothlypis americana*).

HAB. Eastern North America, breeding chiefly north of the United States, but also in New England, south to Connecticut and New York; wintering in southern Florida, Bahamas and Greater Antilles.

SP. CHAR. *Adult ♂*: Above uniform dull grayish blue, including outer edges of quills and tail feathers. A narrow frontal line, entire side of head and neck, chin and throat, uniform deep black, this color extending back along the sides to the tail; rest of lower parts, including axillars and lining of the wing, pure white. Wings and tail black (outer edge of feathers grayish blue); the former relieved by a more or less extensive patch of white at base of primaries, the latter with a white patch near end of inner web of each feather except the middle pair. *Adult ♂ in fall and winter*: Similar to spring and summer plumage, but black feathers of throat margined with white, and back washed, more or less, with olive-green. *Adult ♀*: Dull grayish olive-green above, dull light greenish buff below, inclining to white on the belly; sides of head dusky olive, the eyelids and a more or less distinct superciliary streak whitish; white patch at base of primaries reduced in size, sometimes quite obsolete; white tail-spots also smaller than in the ♂.

“First plumage, ♂. Remiges and rectrices as in autumnal males, the former slightly paler in color. Rest of upper parts, including the wing-coverts, dark olive-brown; sides of head very dark brown; lores black; throat, jugulum, lower eyelids, and a very conspicuous supra-orbital line, pale buff; breast and sides ashy, tinged with olive. Abdomen, anal region, and crissum strong sulphur-yellow. White spot on base of primaries fully developed.” (BREWSTER, Bull. Nutt. Orn. Club, 1878, p. 57.)

“First plumage, ♀. Remiges and rectrices as in autumnal female. Rest of upper parts, including wing-coverts and sides of head, light olive-brown. Lores dull black. Superciliary line, both eyelids, throat, jugulum, abdominal and anal regions, with crissum, light buff. Breast and sides olive, tinged with buff. Spot on base of primaries dirty-white. From two specimens, ♂ and ♀, in my collection, shot with parents at Upton, Me., August 11, 1873. The male above described shows a few black feathers on one side of the throat. Several adult females in my collection, taken both in spring and fall, lack the white wing-patch altogether. Others have it but faintly indicated.” (BREWSTER, l. c.)

The Black-throated Blue Warbler is one of the many species which merely pass hurriedly through our State on their way to their summer home in the great northern woods, and

tropical winter quarters. It possesses nothing specially distinctive in its habits, either during the breeding season or when migrating, and, compared with some other species, may be considered as one of the least abundant of its family, although common enough some seasons.

Dendroica coronata (Linn.)

MYRTLE WARBLER.

Popular Synonyms Myrtle Bird; Yellow-rump Warbler; Yellow-crowned Wood Warbler.

Molucilla coronata LINN. S. N. ed. 12. 1, 1766, 333.

Sylvia coronata LATH.—WILS. Am. Orn. II, 1810, 138, pl. 17, fig. 4.—NUTT. Man. 1, 1832, 361.

—Am. Orn. Biog. II, 1834, 303, pl. 153.

Sylvicola coronata SW. & RICH. F. B. A. II, 1831, 218.—AUD. Synop. 1839, 51; B. Am. II, 1841, 23, pl. 76. NUTT. Man. 2d ed. 1, 1840, 411.

Dendroica coronata GRAY, List Gen. B. App. 1842, 8.—BAIRD. B. N. Am. 1859, 278; Cat. N. Am. B. 1859, No. 194, Review, 1865, 187.—B. B. & B. Hist. N. Am. B. 1, 1874, 227, pl. 12, figs. 9, 12.

Dendroica coronata SCL.—COUES, Key, 1872, 100; Check List, 1873, No. 78; 2d ed. 1882, No. 119; B. N. W. 1874, 57; B. Col. Val. 1878, 378.—RIDGW. Nom. N. Am. B. 1881, No. 96.

HAB. Whole of North America, but chiefly east of Rocky Mountains; very rare, and perhaps merely straggling during migrations, in western portions, although sometimes not uncommon in California. Breeds from northern New England northwards, and perhaps southward along higher Alleghanies. Resident in Jamaica; winters in greater portion of Eastern U. S. (regularly north to about 40°), and also in Mexico, Guatemala and the Greater Antilles.

SP. CHAR. Above bluish-ash, streaked with black. Under parts white. The fore-part of breast and the sides black, the feathers mostly edged narrowly with white. Crown, rump, and sides of breast yellow. Cheeks and lores black. The eyelids and a superciliary stripe, two bands on the wing and spots on the outer three tail feathers

gleaning bread crumbs from the door-steps, or hunting for spiders or other insect tidbits in the nooks of the garden fence or the crevices in the bark of trees; and at evening, flying in considerable companies, to the sheltering branches of the thickest tree tops (preferably evergreens), where they pass the night. Not unfrequently, however, they roost in odd nooks and crannies about the buildings, or even in holes in the straw- or hay-stacks, in the barn-yard. A favorite food of this species are the berries of the Poison-vine (*Rhus toxicodendron*), and during the early part of winter large numbers of them may be seen wherever vines of this species are abundant.

During the winter season the plumage of this bird is dull and unattractive, the sexes being scarcely distinguishable by color; but as spring advances, the male assumes a parti-colored livery of black, slate-blue, white and yellow, which renders him one of the most striking among the feathered rivals of the bees which hum among the blooming apple-trees. At this season, too, the male has an attractive song, somewhat like that of the Summer Yellow-bird, but more of a warble and sweeter in tone.

According to Mr. McFarlane, of the Hudson's Bay Company, the Yellow-rumped Warbler reaches the high northern latitudes, near the Arctic coast, late in May, and leaves that region in September. He states that it nests in moderate abundance at Anderson River, and that, although in a few instances the nest was placed on the ground, it generally built four or five feet up in a low spruce tree.

A nest found at Parsboro' Nova Scotia, is thus described by Dr. Brewer (*Hist. N. Am. B.* Vol. I., p. 228):

"The nest was built on a horizontal branch, the smaller twigs of which were so interlaced as to admit of its being built upon them, though their extremities were interwoven into its rim. The nest was small for the bird, being only two inches in depth and four and a-half in diameter. The cavity is one and a half inches deep and two and a half wide. Its base and external portions consist of fine, light, dry stalks of wild grasses, and slender twigs and roots. Of the last the firm, strong rim of the nest is exclusively woven. Within, the nest is composed of soft, fine grasses, downy feathers, and the fine hair of the smaller mammals."

Dendroica maculosa* (Linn.)*MAGNOLIA WARBLER.**

Popular synonym.—Black and Yellow Warbler.

Molocilla maculosa GM. S. N. I. 1789, 984.

Sylvia maculosa LATH.—AUD. Orn. Biog. I, 1831, 280; II, 1834, 145; V, 1839, 458, pls. 50, 123.—NUTT. Man. I. 1832, 370.

Sylviola maculosa SW. & RICH. F. B. A. II, 1831, 313, pl. 49.—AUD. Synop. 1839, 61; B. Am. II, 1841, 65, pl. 96.

Dendroica maculosa BAIRD, B. N. Am. 1858, 294; Cat. N. Am. B. 1859, No. 204; Review, 1865, 200.—B. B. & R. Hist. N. Am. B. I, 1874, 232, pl. 14, fig. 2.

Dendroica maculosa SCL.—COVES, Key, 1872, 102, Check List, 1873, No. 84; 2d ed. 1889, No. 125; B. N. W. 1874, 62; B. Col. Val. 1878, 290.—RIDGW. Nom. N. Am. B. 1881, No. 97.

Sylvia magnolia WILS. Am. Orn. III, 1811, 63, pl. 23.

HAB. Eastern North America, west to eastern base of Rocky Mountains; breeds from northern New England northward, and winters in Bahamas, Cuba (rare), eastern Mexico, and Central America to Panama.

"SP. CHAR. *Male in spring.* Bill dark bluish black, rather lighter beneath. Tail dusky. Top of head light grayish blue. Front, lores, cheeks, and a stripe under the eye, black, running into a large triangular patch on the back between the wings, which is also black. Eyelids and a stripe from the eye along the side of head white. Upper tail-coverts black, some of the feathers tipped with grayish. Abdomen and lower tail-coverts white. Rump and under parts, except as described, yellow. Lower throat, breast, and sides streaked with black; the streaks closer on the lower throat and fore breast. Lesser wing-coverts, and edges of the wing and tail, bluish gray, the former spotted with black. Quills and tail almost black; the latter with a square patch of white on the inner webs of all the tail feathers (but the two inner) beyond the middle of the tail. Two white bands across the wings (sometimes coalesced into one) formed by the middle and secondary coverts. Part of the edge of the inner webs of the quills white. Feathers margining the black patch on the back behind and on the sides tinged with greenish. Length, 5 inches; wing, 2 50; tail, 2.25. Autumnal males differ in absence of black of back, front, sides of head, and to a considerable degree beneath, and in much less white on the wings, and head.

"Female in spring. Similar, but all the colors duller. Black of the back restricted to a central triangular patch." (*Hist. N. Am. B.*)

The Magnolia Warbler, probably the most showy of the *Dendroica*, is an abundant species during its migrations, but does not breed

- Dendroica cerulea* SOL.—COUES, Key, 1872, 99; Check List, 1872, No. 77; 2d ed. 1882, No. 118; B. N. W. 1874, 56, 233; B. Col. Val. 1878, 267.—RIDGW. Nom. N. Am. B. 1881, No. 98.
Sylvia rara WILS. Am. Orn. III, 1811, 119, pl. 27, fig. 2.—NUTT. Man. 1, 1832, 393.—AUD. Orn. Biog. 1, 1832, 258, pl. 49.
Sylvia azurea STEPH. Gen. Zool. x, 1817, 653.—NUTT. Man. 1, 1832, 407.—AUD. Orn. Biog. 1, 1832, 255, pl. 48.

HAB. Eastern United States, but chiefly west of the Alleghanies; north to Canada West and (casually) Connecticut. Breeds very abundantly throughout the heavily wooded districts of the Mississippi Valley. Winters in Central America and Northern South America; Cuba.

"SP. CHAR. Male. Above bright blue, darkest on the crown, tinged with ash on the rump; middle of back, scapulars, upper tail-coverts, and sides of the crown, streaked with black. Beneath white; a collar across the breast, and streaks on the sides, dusky blue. Lores, and a line through and behind the eye (where it is bordered above by whitish), dusky-blue; paler on the cheeks. Two white bands on the wings. All the tail feathers except the innermost with a white patch on the inner web near the end. *Female*, greenish blue above, brightest on the crown; beneath white, tinged with greenish yellow, obsoletely streaked on the sides; eyelids and a superciliary line greenish white. Length, 4.25; wing, 2.65; tail, 1.90.

"The autumnal adult plumage of both sexes is, in every respect, exactly like the spring dress. Young males in late summer are very similar to adult females, but are purer white below, and less uniform greenish blue above, the dark stripes on sides of the crown and black centres to scapulars being quite conspicuous; the young female, at the same season, is similar in pattern to the adult, but is dull green above, without any tinge of blue, and light buffy yellow below.

"There is considerable variation in adult males, especially in the width of the pectoral collar; one (No. 60,877, Mt. Carmel, Wabash Co., Ill., Aug. 9) has this entirely interrupted. In this individual there is no trace of a whitish supra-auricular streak; while others from the same locality, and obtained at the same date, have the band across the jugulum continuous, and a quite distinct white streak over the ear-coverts." (*Hist. N. Am. A.*)

This pretty little warbler is by far the most abundant of the summer-resident members of the family in Illinois. It frequents chiefly if not exclusively the tall timber of creek and river bottoms, where it keeps much among the tree-tops rarely descending to the undergrowth, and then perhaps only to search for material for its nest.

"It is a bird of the woods, everywhere associated with the beautiful tall forests of the more northern counties of Western New York, sometimes found in the open woods of pasture-lands, and quite partial to hardwood trees. In its flitting motions in search of insect-prey, and in the jerking curves of its more prolonged flight, as also in structure, it is a genuine Wood Warbler, and keeps, for the most part, to what Thoreau calls "the upper story" of its sylvan domain. Its song, which is frequent, and may be heard for some distance, may be imitated by the syllables *rheet, rheet, rheet, rheet, ridi, idi, e-e-e-e-e-e*; beginning with several soft, warbling notes, and ending in a rather prolonged but quite musical squeak. The latter and more rapid part of the strain, which is given in the upward slide, approaches an insect quality of tone which is more or

less peculiar to all blue Warblers. This song is so common here as to be a universal characteristic of our tall forests. The bird is shy when started from the nest, and has the sharp chipping alarm-note common to the family. The nest is saddled on a horizontal limb of considerable size, some distance from the tree, and some forty or fifty feet from the ground. Small, and very neatly and compactly built." (Rev. J. H. Langille, in *Ornithologist and Oologist*, Dec. 1882, p. 191.)

In *History of North American Birds*, Vol. III., page 505, Dr. Brewer describes a nest of this species, as follows:

"A nest, containing one egg, of the Cærulean Warbler, was obtained in June, 1873, by Frank S. Booth, the son of James Booth, Esq., the well known taxidermist of Drummondville, Ontario, near Niagara Falls. The nest was built in a large oak-tree at the height of fifty feet or more from the ground. It was placed horizontally on the upper surface of a slender limb, between two small twigs, and the branch on which it was thus saddled was only an inch and a half in thickness. Being nine feet from the trunk of the tree, it was secured with great difficulty. The nest is a rather slender fabric, somewhat similar to the nest of the Redstart, and quite small for the bird. It has a diameter of $2\frac{3}{8}$ inches, and is $1\frac{1}{2}$ inches in depth. Its cavity is 2 inches wide at the rim, and 1 inch in depth. The nest chiefly consists of a strong rim firmly woven of strips of fine bark, stems of grasses, and fine pine needles, bound round with flaxen fibres of plants and wool. Around the base a few bits of hornets' nests, mosses, and lichens are loosely fastened. The nest

Dendroica pennsylvanica (Linn.)

CHESTNUT-SIDED WARBLER

Motacilla pennsylvanica LINN. S. N. ed. 12, i, 1766, 333.

Sylvia pennsylvanica WILS. Am. Orn. ii, 1810, 99, pl. 14, fig. 5.

Dendroica pennsylvanica BAIRD, B. N. Am. 1858, 279; Cat. N. Am. B. 1859, No. 200; Review, 1865, 191.—B. B. & R. Hist. N. Am. B. i, 1874, 245, pl. 13, figs. 7, 8.

Dendroica pennsylvanica SCL. & SALV.—COUES, Key, 1872, 101; Check List, 1873, No. 83; 2d ed. 1882, No. 124; B. N. W. 1874, 62; B. Col. Val. 1878, 244.—RIDGW. Nom. N. Am. B. 1881, No. 99.

Motacilla icterocephala LINN. S. N. ed. 12, i, 1766, 334.

Sylvia icterocephala LATH.—AUD. Orn. Biog. i, 1832, 306, pl. 59.—NUTT. Man. i, 1832, 380.

Sylvicola icterocephala RICH.—AUD. Synop. 1839, 54; B. Am. ii, 1841, 35, pl. 81.

HAB. Eastern North America, breeding from northern United States northward into British America. Winters in southern Mexico, Honduras, Guatemala, and thence to Panama; Bahamas.

"SP. CHAR. *Male*. Upper parts streaked with black and pale bluish gray, which becomes nearly white on the forepart of the back; the middle of the back glossed with greenish yellow. The crown is continuous yellow, bordered by a frontal and superciliary band, and behind by a square spot of white. Loral region black, sending off a line over the eye, and another below it. Ear-coverts and lower eyelid and entire under parts pure white; a purplish chestnut stripe starting on each side in a line with the black mustache, and extending back to the thighs. Wing- and tail-feathers dark brown, edged with bluish gray, except the secondaries and tertials, which are bordered with light yellowish green. The shoulders with two greenish white bands. Three outer tail-feathers with white patches near the end of the inner webs.

"*Female* like the male, except that the upper parts are yellowish green, streaked with black; the black mustache scarcely appreciable. Length, 5.00; wing, 2.50; tail, 2.20.

"The young in autumn is very different from either male or female in spring. The entire upper parts are of a continuous light olive-green; the under parts white; the sides of the head, neck, and breast ash-gray, shading insensibly into and tinging the white of the chin and throat. No black streaks are visible above or on the cheeks, and the eye is surrounded by a continuous ring of white, not seen in spring. In this plumage it has frequently been considered as a distinct species.

"The male in this plumage may usually be distinguished from the female by possessing a trace, or a distinct stripe, of chestnut on the flanks, the young female at least lacking it." (*Hist. N. Am. B.*)

Perhaps the prettiest of our Warblers, this elegant little bird is usually, especially during the fall migration, one of the most abundant. It breeds in the northern portion of the State, but how far southward is not known. In June, 1871, the writer saw a pair in the scrubby woods bordering Fox Prairie, in Richland county, at a time when all the summer residents were nesting; but they may

nearly white, the sides tinged with dirty brown, even if the (generally present) trace of chestnut be wanting on the sides. There is a buff tinge to the under tail-coverts; the quills are abruptly margined with white, and there are no traces (however obsolete) of streaks on the breast. In *D. striata* the under parts are quite uniformly washed with greenish yellow nearly as far back as the vent, the sides of the breast and sometimes of the belly with obsolete streaks; no trace of the uniform dirty reddish brown on the sides; the under tail-coverts are pure white. The quills are only gradually paler towards the inner edge, instead of being rather abruptly white." (*Hist. N. Am. B.*)

Comparatively little is known of the habits of this species. It passes by in spring and fall, being sometimes abundant at both seasons, but does not tarry long. It breeds in the dense coniferous forests of the north, from the shores of Lake Superior to northern Maine. In general habits, at all times, it closely resembles other species of the genus.

In Oxford county, Maine, says Mr. Maynard*, "these birds are found in all the wooded sections of this region, where they frequent the tops of tall trees. The first part of the song is like that of the Black-poll Warbler, but it has a terminal warble similar to that of the Redstart, to which it bears a striking resemblance, with the exception that it is given with less energy. This species seems to be confined during the building season to the region just north of the White Mountains range."

Dendroica striata (Forst.)

BLACK-POLL WARBLER.

Muscicapa FORST. Philos. Trans. lvii, 1772, 406, 428.

Sylvia striata LATH.—WILS. Am. Orn. iv, 1811, 40, pl. 30, fig. 3; vi, 1812, 101, pl. 54, fig. 2.—NUTT. Man. i, 1832, 383.—AUD. Orn. Biog. ii, 1834, 201, pl. 133.

Sylvicola striata SW. & RICH. F. B. A. ii, 1831, 218.—AUD. Synop. 1839, 53; B. Am. ii, 1841, 28, pl. 78.

Dendroica striata BAIRD, B. N. Am. 1858, 280; Cat. N. Am. B. 1859, No. 202: Review, 1865, 192.—B. B. & R. Hist. N. Am. B. i, 1874, 248, pl. 13, fig. 9.

Dendroica striata BLAKIST. Ibis, 1863, 62.—COUES, Key. 1872, 100; Check List, 1873, No. 81; 2d ed. 1882, No. 122; B. N. W. 1874, 60; B. Col. Val. 1878, 288.—RIDGW. Nom. N. Am. B. 1881, No. 101.

HAB. In summer, northern North America, breeding from northern New England and coast of Labrador to the coast of Alaska (as far south as Fort Kenai) and shores of the Arctic Ocean; migrating through eastern United States; wintering in Cuba (rare) and parts of South America (Colombia and Chili?).

* Proc. Boston Soc. Nat. Hist. xiv, Oct. 18, 1871, pp. 10, 11.

"SP. CHAB. *Male*. Crown, nape, and upper half of the head black; the lower half, including the ear-coverts, white, the separating line passing through the middle of the eye. Rest of upper parts grayish ash, tinged with brown, and conspicuously streaked with black. Wing and tail-feathers brown, edged externally (except the inner tail-feathers) with dull olive-green. Two conspicuous bars of white on the wing-coverts, the tertials edged with the same. Under parts white, with a narrow line on each side of the throat from the chin to the sides of the neck, where it runs into a close patch of black streaks continuing along the breast and sides to the root of the tail. Outer two tail-feathers with an oblique patch on the inner web near the end; the others edged internally white. *Female* similar, except that the upper parts are olivaceous, and, even on the crown, streaked with black, the white on the sides and across the breast tinged with yellowish; a ring of the same round the eye cut by a dusky line through it. Length of male, 5.75; wing, 3.00; tail, 2.25." (*Hist. N. Am. B.*)

The autumnal dress is very different from that of spring. The upper parts are light olive-green, indistinctly streaked with dusky; beneath greenish yellow, obsoletely streaked on the breast and sides; the under tail-coverts, only, pure white, a yellowish ring round the eye, and a superciliary one of the same color. In this dress it is very easily confounded with the autumnal *D. castanea*. The differences, as far as tangible, will be found detailed under the head of the latter species.

"The young bird in its first dress is also quite different, again, from the autumnal-plumaged birds. The upper parts are hoary-grayish, the lower white; each feather of the whole body, except lower tail-coverts, with a terminal bar or transverse spot of blackish, those on the upper parts approaching the base of the feathers along the shaft. Wings and tail much as in the autumnal plumage." (*Hist. N. Am. B.*)

Except the Yellow-crowned Warbler, (*D. coronata*) and the Summer

- Dendroica blackburniæ* BAIRD. B. N. Am. 1858, 274; Cat. N. Am. B. 1859, No. 196; Review, 1865, 189.—B. B. & R. Hist. N. Am. B. 1, 1874, 237, pl. 13, figs. 2, 3.
Dendroica blackburniæ SCL.—COUES, Key, 1872, 100; Check List, 1873, No. 80; 2d ed. 1882, No. 121 ("*blackburniæ*"); B. N. W. 1874, 59; B. Col. Val. 1878, 284.—RIDGW. Nom. N. Am. B. 1881, No. 102.
Sylvia parus WILS. Am. Orn. v, 1812, 114, pl. 44, fig. 3.—NUTT. Man. i, 1832, 392.—AUD. Orn. Biog. ii, 1834, 205, pl. 134.
Sylvicola parus BONAP.—AUD. Synop. 1839, 55; B. Am. ii, 1841, 40, pl. 83.

HAB. Eastern North America, breeding from northern United States northward to British Provinces; straggling westward to Utah and New Mexico. Winters in eastern Mexico and south to Colombia and Ecuador; Bahamas; Greenland?

"SP. CHAR. Upper parts nearly uniform black, with a whitish scapular stripe and a large white patch in the middle of the wing-coverts. An oblong patch in the middle of the crown, and the entire side of the head and neck (including a superciliary stripe from the nostrils), the chin, throat, and forepart of the breast, bright orange-red. A black stripe from the commissure passing around the lower half of the eye, and including the ear-coverts; with, however, an orange crescent in it, just below the eye, the extreme lid being black. Rest of under parts white, strongly tinged with yellowish orange on the breast and belly, and streaked with black on the sides. Outer three tail-feathers white, the shafts and tips dark brown; the fourth and fifth spotted much with white; the other tail-feathers and quills almost black. *Female* similar; the colors duller; the feathers of the upper parts with olivaceous edges. Length, 5.50; wing, 2.83; tail, 2.25.

"Autumnal males resemble the females. They have two white bands instead of one; the black stripes on the sides are larger; under parts yellowish; the throat yellowish, passing into purer yellow behind.

"Autumnal young birds have the same pattern of coloration, but the dark portions are dull grayish umber, with the streaks very obsolete, and the light parts dull buffy-white, tinged with yellow on the jugulum; there is neither clear black, bright yellow, nor pure white on the plumage, except the latter on the wing-bands and tail-patches." (*Hist. N. Am. B.*)

Few of our birds are more beautiful than the full-plumaged male of this lovely bird, whose glowing orange throat renders it a conspicuous object among the budding and blossoming branches. The species is migratory in Illinois, passing through in spring and fall, its summer home being chiefly, if not wholly, to the northward of our State, while it passes the winter in Central America and northern South America. The Blackburnian Warbler breeds in the northern portion of New York, and in portions of Massachusetts, and thence northward to the British Provinces, frequenting the coniferous forests, and building its nest in bushes or small trees a few feet above the ground.

Dendroica dominica albilora* Baird.*SYCAMORE WARBLER.**

Popular synonymy. White-cheeked Warbler; White-browed Yellow-throated Warbler.

Dendroica or *Dendroica dominica*.

Dendroica or *Dendroica superciliosa*.

Sylvia or *Sylvicola penicillata*.

} All quotations for localities west of the Alleghenies and in middle America.

Dendroica dominica var. *albilora* BAIRD, RIDGW. Am. Nat. vii, 1873, 606.—COVENS, Check List, 1879, No. 88a.—B. B. & R. Hist. N. Am. B. i, 1874, 241, pl. 14, fig. 7.

Dendroica dominica albilora RIDGW. Nom. N. Am. B. 1881, No. 103a.

HAB. Mississippi Valley in summer, north to the Great Lakes, east to West Virginia, and west to eastern Kansas; winters in Mexico (both coasts), Guatemala and Honduras.

SP. CHAR. *Adult (sexes alike).* Above ash-gray, without streaks, the forehead or sides of crown, or both, black. Wings blackish, the middle and greater coverts broadly tipped with white and edged with ash-gray; remiges edged with ash gray. Tail dusky, the feathers edged with ash-gray, the inner webs of three outer rectrices with a large white patch covering the terminal portion—on the lateral feathers occupying nearly half of the web. A white supercilary stripe, sometimes tinged with yellow anteriorly; a crescentic spot beneath eye, and large space on side of neck immediately behind auriculars, also white. Lores and auriculars deep black, this continued down each side of the throat, but on sides of breast broken into stripes which extend along sides to the flanks. Chin, throat, and jugulum bright gamboge-yellow, the first white anteriorly. Rest of lower parts except as described, white. Bill deep black; iris brown; legs and feet brownish. Wing about 2.50-2.65; tail, 2.00-2.25; exposed culmen, .45-.48; tarsus, .65-.70.

The plumage of the adult in fall and early winter differs from the spring livery, as described above, only in having the ash-gray, and also the white of the abdomen, slightly tinged with brownish. The young in first autumn are essentially similar to autumnal adults, but have the brownish wash or discoloration more distinct,

The first specimen which the writer ever saw was creeping about the eaves and cornices of a frame dwelling house in the center of the town of Mt. Carmel. Very often, however, it could not be distinguished from other warblers, so far as its actions were concerned.

Mr. Nelson (page 35 of his list) makes the following record of his experience with this species at Mt. Carmel:

"First noted August 30, when they were found to be abundant in a group of elm trees on the river bank near town. During the succeeding three days they were plentiful, and thirty-six specimens were taken and many more seen. After September 2 not a specimen was to be found, though diligent search was made. While here they showed great preference for the elm trees before mentioned, none being found elsewhere. They uttered the faint "cheep" common to most warblers, and one was heard delivering a low song from the top of a tall elm. The notes were so low that even when standing under the same tree the song could only be distinguished by careful listening."

The distribution of this species is not yet well made out; it probably occurs, however, in all parts of the State where there are suitable localities; i. e., densely timbered creek or river bottoms, where large sycamore trees are abundant. Dr. R. M. W. Gibbs informs me (in letter) that he took a specimen at Kalamazoo, Michigan, (lat. 40° 25') on May 5, 1877, and another in the fall; and, though probably erroneously, that it probably goes farther north to breed.

Mr. Nelson records it as being in Cook county a very rare summer visitant from the south. Prof. D. S. Jordan, of Indianapolis, Indiana, writes that this species is a common summer resident in that vicinity, and that he has trustworthy information of its rather common occurrence, in summer, in the vicinity of Detroit, Michigan.

***Dendroica virens* (Gmel.)**

BLACK-THROATED GREEN WARBLER.

Motacilla virens GMEL. S. N. i, 1788, 985.

Sylvia virens LATH.—WILS. Am. Orn. iv, 1810, 127, pl. 17, fig. 3.—NUTT. Man. i, 1832, 376.

—AUD. Orn. Biog. iv, 1838, 70, pl. 399.

Sylvicola virens RICH.—AUD. Synop. 1839, 55; B. Am. ii, 1841, 42, pl. 84.

Dendroica virens BAIRD, B. N. Am. 1858, 267; Cat. N. Am. B. 1859, No. 189; Review, 1865,

182.—B. B. & R. Hist. N. Am. B. i, 1874, 261, pl. 12, fig. 4.

Dendroica virens SCL.—COUES, Key, 1872, 97; Check List, 1873, No. 71; 2d ed. 1882, No. 112;

B. N. W. 1874, 54; B. Col. Val. 1878, 240.—RIDGW. Nom. N. Am. B. 1881, No. 107.

Dendroica palmarum* (Gmel.)*PALM WARBLER.**

Popular synonyms. Wagtail Warbler; Titlark Warbler; Tip-up Warbler; Red-poll Warbler.

Motacilla palmarum GMEL. S. N. 1, 1783, 951.

Sylvia palmarum LATH. et AUD.

Sylvicola palmarum RICH. et AUD.

Dendroica palmarum (part) BAIRD, B. N. Am. 1859, 288; Cat. N. Am. B. 1859, No. 208; Review, 1865, 307.—B. B. & R. Hist. N. Am. B. 1, 1874, 273, pl. 14, fig. 8.

Dendroica palmarum SCL.—COUES, Key, 1872, 104 (part); Check List, 1873, No. 90 (part); 2d ed, 1882, No. 132; B. N. W. 174, 67 (part); B. Col. Val. 1879, 284 (excl. syn. part).—RIDGW. Nom. N. Am. B. 1881, No. 113.

Sylvicola petechia SW. & RICH, F. B. A. 41, 1881, 215, pl. 41.—AUD. Synop. 1839, 58; B. Am. 11, 1841, 55, pl. 90.

HAB. Interior of eastern North America, north to Forts Simpson and Resolution, east to western base of the Alleghanies, west to the lower Missouri and eastern Texas; breeds chiefly north of the United States; winters in the Gulf States and Lower Mississippi Valley, and also in the Greater Antilles. Occasional in Atlantic States, where, however, as well as northward to Labrador, chiefly replaced by the much brighter colored form, *hypochrysea*.*

SP. CHAR. *Adult male in spring* (No. 83,024, U. S. Nat. Mus. Mount Carmel, Illinois, April 22, 1869.) Beneath yellowish white, tinged with yellow, the throat and crissum deepening into gamboge; sides of the neck, sides, and *entire breast*, streaked with umber-brown, tinged with rusty, the shafts of the feathers darker; a distinct superciliary stripe of clear yellow. Pileum uniform rich chestnut, darker next the bill, where divided medially by a short and indistinct streak of yellow. Upper parts in general olive-gray, deepening into yellowish olive-green on the upper tail-coverts. Tail-feathers dusky, edged externally with pale olive-yellowish, the two outer pairs with their inner webs broadly tipped with white. Wings dusky, the remiges edged like the tail-feathers, with yellowish olive-green; both rows of coverts tipped with pale grayish buff, forming rather distinct indications of two bands. Wing, 2.55; tail, 2.30; bill, from nostril, .30; tarsus, .30.

Most other males in the series before me are rather duller than

Adult female in spring (No. 83,027, U. S. Nat. Mus., Mount Carmel, Ill., spring; S. Turner). Similar to the male, as described above, but pileum mixed chestnut and dark umber-brown, *distinctly streaked* with dusky. Wing, 2.35; tail, 2.05; bill, from nostril, .28; tarsus, .71.

A female from Calumet, Ill. (No. 83,029, U. S. Nat. Mus., May 12, 1875; E. W. Nelson), is considerably paler and duller, the lower parts being whitish tinged with yellow on the throat and jugulum, only the crissum continuous yellow; even the superciliary stripe is white from the eye backward. The pileum is grayish olive, like the back, tinged in one or two places with chestnut, and very indistinctly streaked. The streaks on the sides are almost obsolete, but across the jugulum they are quite well defined.

Many females, however, are quite as brightly colored as the brightest males, the variation being chiefly individual and not sexual.

Adult (both sexes) in winter. Lower parts dirty whitish, the breast and sides with narrow streaks of grayish brown; *throat and superciliary stripe wholly dirty whitish; yellow entirely confined to the crissum*, except a tinge on the abdomen, and along the edge of the wing in some specimens; crown grayish umber, with but little, if any, tinge of chestnut, and distinctly streaked with dusky.

This plumage is that of all late fall and winter specimens, whether from far north or the West Indies. I have seen no specimens from the latter region in the spring plumage.

During the spring migration this is one of the most abundant of the Warblers, and for a brief season may be seen along the fences, or the borders of fields, usually near or on the ground, walking in a graceful, gliding manner, like an *Anthus* or *Seiurus*, the body tilting and the tail oscillating at each step. For this reason it is sometimes, and not inappropriately called Wag-tail Warbler. The species probably does not breed anywhere within the limits of the State, but goes far north to pass the summer. Mr. Kennicott found a nest at Fort Resolution, in Arctic America. It was on the ground, on a hummock, at the foot of a small spruce tree in a swamp. When discovered (June 18), it contained five young.

Dendroica discolor (Vieill.)

PRAIRIE WARBLER

Popular synonym. Chestnut-backed Yellow Warbler.

Sylvia discolor VIEILL. Ois. Am. Sept. ii, 1807, 37, pl. 98.—NUTT. Man. i, 1832, 394 ("294" by error).—AUD. Orn. Biog. i, 1831, 76, pl. 14.

Sylvicola discolor JARD.—AUD. Synop. 1839, 62; B. Am. ii, 1841, 68, pl. 97.

Dendroica discolor BAIRD, B. N. Am. 1858, 290; Cat. N. Am. B. 1859, No. 210; Review, 1865, 213.—B. B. & R. Hist. N. Am. B. i, 1874, 276, pl. 14, fig. 9.

BIRDS OF ILLINOIS.

color A. & E. NEWTON, Ibis, 1859, 144. —COOPER, Key. 1872, 103; Check List, 3d ed. 1882, No. 127; B. N. W. 1874, 63; B. Col. Vol. 1878, 246. —RIDGWAY, Nom. 1881, No. 114.

WILSON, Am. Orn. Ill. 1811, 87, pl. 85, fig. 4.

United States, north to Massachusetts and northern Illinois, west to nearly throughout its range, in suitable localities. Winters in Florida and in most of the West Indies.

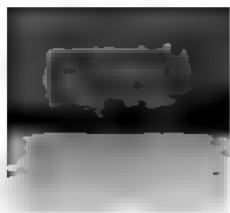
Young male. Above uniform olive-green, the interscapular region with dusky to feathers. Under parts and sides of the head, including a broad band from the nostrils to a little behind the eye, bright yellow, brightest and a narrow stripe from the commissure of the mouth through the eye, extending from the throat to the flanks, black. Quills and tail-feathers with white, the terminal half of the inner web of the first and second white. Two yellowish bands on the wings. *Female* similar, but the streaks indistinct. Length, 4.86; wing, 2.36; tail, 2.10.

Of the young not seen.

specimens have the plumage more blended, but the color is changed. A young male in autumnal dress is wholly olive-green above, the whole wing uniform; the forehead and cheeks about the head rather obsolete, the chestnut and the black ones on the sides nearly concealed."

(B.)

1 Prairie Warbler (and a less appropriate name has been given it) is one of the few species which appear to



etc. The whole is bound together like a web by cotton-like fibres of a vegetable origin. The upper rim of this nest is a marked feature, being a strongly interlaced weaving of vegetable roots and strips of bark. The lining of the nest is composed of fine vegetable fibres and a few horse-hairs. This nest, in its general mode of construction, resembles all that I have seen; only in others the materials vary—in some, dead and decayed leaves, in others, remains of old cocoons, and in others, the pappus of composite plants, being more prominent than the fine strips of bark. The nests are usually within four feet of the ground. The eggs vary from three to five, and even six."

GENUS *SEIURUS* SWAINSON.

Seiurus SWAINSON, Zool. Jour. III, 1827, 171. Type, *Motacilla aurocapilla* LINK.

"GEN. CHAR. Bill rather compressed, with a distinct notch. Gonys ascending. Rictal bristles very short. Wings moderate (about three quarters of an inch longer than the tail); first quill scarcely shorter than the second. Tail slightly rounded, feathers acuminate. Tarsi about as long as the skull, considerably exceeding the middle toe. Under tail-coverts reaching within about half an inch of the end of the tail. Color above olivaceous; beneath whitish, thickly streaked on the breast and sides; wings and tail immaculate. Nests on the ground, often arched or sheltered by position or dry leaves. Eggs white, marked with red, brown, and purple."

"This genus is decidedly sylvicoline in general appearance, although the spots on the breast resemble somewhat those of the 'Thrushes.' (Hist. N. Am. B.)

Key to the Species.

- A. Crown orange-rufous centrally, bordered on each side by a blackish stripe; no white superciliary stripe.
 - 1. *S. aurocapillus*. Above brownish olive-green. Young: Above fulvous brown, with indistinct dusky shaft-streaks on the back; wing-coverts tipped with light fulvous, lower parts light fulvous, with dusky shaft-streaks, except on abdomen and crissum.
- B. Crown uniform with the back, and bordered on each side by a distinct white superciliary stripe.
 - 2. *S. motacilla*. Throat and crissum immaculate, or else the former only minutely speckled; lower parts creamy white, the flanks and crissum deeper buff; superciliary stripe white. Wing, 3.20-3.25; tail, 2.20-2.35; bill from nostril, .40-.45.
 - 3. *S. noveboracensis*. Throat always more or less speckled, and crissum with distinct, though mostly concealed, streaks; lower parts pale sulphur-yellow, or yellowish white, not deeper on flanks or crissum; superciliary stripe light fulvous.
 - α . *noveboracensis*. Wing, 3.-3.10; tail, 2.25-2.40; bill from nostril, .35-.38.
 - β . *notabilis*. Wing, 3.05-3.25; tail, 2.25-2.50; bill from nostril, .40-.50.

Seiurus aurocapillus (Linn.)**OVEN BIRD.**

Popular synonyma. Golden-crowned Thrush; Wood Wagtail; Land Kick-up (Jamaica); Golden-crowned Accentor.

Motacilla aurocapilla LINN. S. N. ed. 12, 1, 1766, 334.

Turdus aurocapillus LATH.—WILS. Am. Orn. 111, 1810, 83, pl. 14, fig. 2.—NUTT. Man. 1, 1832, 355; 2d ed. 1, 1840, 404.—AUD. Orn. Biog. 11, 1834, 253; v. 1839, 447, pl. 143.

Seiurus aurocapillus SWAINS.—SW. & BICK. F. B. A. 11, 1831, 227.—AUD. Synop. 1839, 33; B. Am. 111, 1841, 35, pl. 148.—BAIRD, B. N. Am. 1853, 260; Cat. N. Am. B. 1859, No. 186; Review, 1865, 214, 266.—COUES, Key, 1872, 105; Check List, 1873, No. 92; B. N. W. 1874, 70.—B. B. & R. Hist. N. Am. B. 1, 1874, 280, pl. 14, fig. 11.

Seiurus aurocapillus MOORE.—COUES, B. Col. Val, 1873, 296; 2d Check List, 1882, No. 135.—RIDGW. Nom. N. Am. B. 1881, No. 115.

HAB. Eastern North America, north to Hudson's Bay Terr. and Alaska, west to Rocky Mountains, breeding nearly throughout its range. In winter, Florida, Bermudas, all of West Indies, Mexico (both coasts), and Central America, south at least to Costa Rica.

"SP. CHAR. Above uniform olive-green, with a tinge of yellow. Crown with two narrow streaks of black from the bill enclosing a median and much broader one of brownish orange. Beneath white; the breast, sides of the body, and maxillary line, streaked with black. The female and young of the year are not appreciably different. Length, 5.00; wing, 3.00; tail, 2.40." (*Hist. N. Am. B.*)

First plumage. Remiges, rectrices, etc., as in the adult. Rest of upper parts dull fulvous-brown; the crown without stripes; all the feathers very indistinctly darker centrally; lower parts paler, more buffy, fulvous, growing gradually white toward the crissum, the buffy portions (breast and sides), with very fine indistinct streaks of dusky. (From a specimen obtained near Washington, D. C.)

The golden-crowned Thrush or Oven Bird is one of the most generally distributed and numerous birds of Eastern North America. It is almost certain to be found in any piece of woodland, if not too wet, and its frequently repeated song, which is not

he reserves for some nymph whom he meets in the air. Mounting by easy flights to the top of the tallest tree, he launches into the air with a sort of suspended, hovering flight, and bursts into a perfect ecstasy of song—clear, ringing, copious, rivalling the Goldfinch's in vivacity, and the Linnet's in melody. This strain is one of the rarest bits of bird-melody to be heard. Over the woods, hid from view, the ecstatic singer warbles his finest strain. In the song you instantly detect his relationship to the Water Wagtail (*Seiurus noveboracensis*)—erroneously called Water Thrush—whose song is likewise a sudden burst, full and ringing, and with a tone of youthful joyousness in it, as if the bird had just had some unexpected good fortune. For nearly two years this strain of the pretty warbler was little more than a disembodied voice to me, and I was puzzled by it as Thoreau was by his mysterious Night-Warbler, which, by the way, I suspect was no new bird at all, but one he was otherwise familiar with. The little bird himself seems disposed to keep the matter a secret, and improves every opportunity to repeat before you his shrill, accelerating lay, as if this were quite enough, and all he laid claim to. Still, I trust I am betraying no confidence in making the matter public here. I think this is preëminently his love-song, as I hear it oftenest about the mating season. I have caught half-suppressed bursts of it from two males chasing each other with fearful speed through the forest."

According to Dr. Brewer (*Hist. N. Am. B.* Vol. I., p. 282), "the oven bird always nests on the ground, and generally constructs nests with arched or domed roofs, with an entrance on one side, like the mouth of an oven, and hence its common name. This arched covering is not, however, universal. For a site this species usually selects the wooded slope of a hill, and the nests are usually sunk in the ground. When placed under the shelter of a projecting root, or in a thick clump of bushes, the nest has no other cover than a few loose leaves resting on, but forming no part of it.

"A nest from Racine, Wis., obtained by Dr. Hoy, is a fine typical specimen of the domed nests of this species. The roof is very perfect, and the whole presents the appearance of two shallow nests united at the rim, and leaving only a small opening at one side. This nest was five inches in diameter from front to back, six inches from side to side, and four inches high. The opening was two and a quarter inches wide, one and three quarters high. The cavity was two inches deep below the brim. At the entrance the roof recedes about an inch, obviously to allow of a freer entrance and exit

from the nest. Externally this nest is made of wood-mosses, lichens, and dry leaves, with a few stems and broken fragments of plants. The entrance is strongly built of stout twigs, and its upper portion is composed of a strong framework of fine twigs, roots, stems, mosses, dry plants, etc., all firmly interwoven and lined with finer materials of the same."

Seiurus motacilla (Vieill.)

LOUISIANA WATER-THRUSH.

Popular synonyms. Large-billed Water-thrush; Water Wagtail; Wagtail.

Turdus motacilla VIEILL. Ois. Am. Sept. ii, 1807, 9, pl. 65.

Seiurus motacilla COUES, Bull. Nutt. Orn. Club, ii, 1877, 33; B. Col. Vol. 1878, 309; 2d Check List, 1882, No. 138. RIDGW. Nom. N. Am. B. 1881, No. 117.

Turdus ludovicianus AUD. Orn. Biog. i, 1832, 99, pl. 19.

Seiurus ludovicianus BONAP. -BAIRD, B. N. Am. 1858, 262; ed. 1860, pl. 80, fig. 2; Cat. N. Am. B. 1859, No. 188; Review, 1865, 217. COUES, Key, 1872, 106, Check List, 1873, No. 94; B. N. W. 1874, 72. B. B. & R. Hist. N. Am. B. i, 1874, 237, pl. 14, fig. 13.

HAB. Eastern United States, north to Michigan and (rarely) Massachusetts, west to Kansas, Indian Territory and Texas; breeding north to Connecticut and lower Hudson River Valley, southern Michigan, etc., but chiefly west of the Alleghanies. Winters in eastern Mexico, Guatemala, and south to Veragua, also in Cuba and Jamaica.

"SP. CHAR. Bill longer than the skull. Upper parts olive-brown with a shade of greenish. A conspicuous white superciliary line from the bill to the nape, involving the upper lid, with a brown one from the bill through the eye, widening behind. Under parts white, with a very faint shade of pale buff behind, especially on the tail-coverts. A dusky maxillary line; the forepart of breast and sides of body with arrow-shaped streaks of the same color. Chin, throat, belly, and under tail-coverts, usually immaculate. Length, 6.33, wing, 3.25; tail, 2.40; bill, from rictus, .75. Sexes similar. Young not seen.

"Autumnal specimens have a more or less strong wash of ochra-



times placed within a few yards of one another. It is usually seen upon the wet ground or wading in the shallow water, its body in a horizontal position or even more elevated posteriorly, but continually tilting up and down, and when moving about it progresses by a graceful gliding walk. If it fancies itself observed, it runs slyly beneath the brush- or drift-wood overhanging the shore; and if alarmed, flies up suddenly with a sharp and startling chatter.

Audubon describes the song of this species as fully equal to that of the nightingale, its notes as powerful and mellow, and at times as varied. This may be true of the ecstatic love-song, heard on rare occasions, and uttered as the singer floats in perfect *abandon* of joy, with spread tail and fluttering wings; but it can hardly be true of the ordinary song, which, although rich, sweet, and penetrating, and almost startling in the first impressions it creates, is soon finished, and the pleasing effect somewhat transient.

It cannot be denied, however, that its song is one of the richest to be heard in our forests.

Seiurus noveboracensis (Gmel.) .

WATER-THRUSH.

Popular synonyms. Small-billed Water-thrush; Water Wagtail; Water Kick-up; Bessy Kick-up and River Pink (Jamaica); Aquatic Accentor; New York Aquatic Thrush.

Motacilla navia BODD. Tabl. P. E. 1783, 47 (based on Pl. Enl. 752, fig. D). (Not of p. 35.)

Seiurus navius COUES, Bull. Nutt. Orn. Club, 11, 1877, 32; B. Col. Val. 1878, 299; 2d Check List, 1882, No. 136.—RIDGW. Nom. N. Am. B. 1881, No. 116.

Motacilla noveboracensis GMEL. S. N. i, 1788, 958.

Turdus (Seiurus) noveboracensis NUTT. Man. 1, 1832, 353.

Seiurus noveboracensis BONAP.—AUD. Synop. 1839, 98; B. Am. iii, 1841, 37, pl. 49 (part).—BAIRD, B. Am. 1858, 261; Cat. N. Am. B. 1859, No. 187; Review, 1855, 215.—COUES, Key, 1872, 106; Check List, 1873, No. 98; B. N. W. 1874, 71.—B. B. & R. Hist. N. Am. B. i, 1874, 283, pl. 14, fig. 12.

Turdus aquaticus WILS. Am. Orn. iii, 1811, 66, pl. 23, fig. 5.—AUD. Orn. Biog. v, 1839, 284, pl. 423, fig. 7.

Seiurus aquaticus SW. & RICH. F. B. A. ii, 1831, 229, pl. 43.

HAB. Eastern North America, chiefly east of the Mississippi, north to the Arctic coast, breeding from northern border of United States northward. Winters in more southern United States, all of middle America (both coasts), northern South America, and all of West Indies. Accidental in Greenland.

SP. CHAR. Bill, from rictus, about the length of the skull. Above olive-brown, with a shade of green; beneath pale sulphur-yellow, brightest on the abdomen. Region about the base of the lower mandible, and a superciliary line from the base of the bill to the nape, brownish yellow. A dusky line from the bill through the eye; chin and throat finely spotted. All the remaining under parts and sides of the body, except the abdomen and including the under tail-coverts, conspicuously and thickly streaked with olivaceous brown, almost black on the breast. Length, 6.15; wing, 3.12; tail, 2.40. Bill, from rictus, .64. Sexes similar.

"A very young bird (22,619, Fort Simpson, August 10) is very different from the adult in coloration. The upper parts are fuliginous black, each feather with a broad terminal bar of pale ochraceous, wing-coverts tipped with the same, forming two distinct bands; streaks below as in the adult, but broader and less sharply defined." (*Hist N. Am. B.*)

The summer home of the Water-thrush is in the more northern portions of the continent, its breeding range embracing the whole of arctic and subarctic America, from the western portions of Alaska to the region about Hudson's Bay, and southward to the northern border of the United States. In Illinois the species is known as a migrant, passing slowly through in spring and fall, though in the extreme southern portion a few pass the winter, especially if the season be mild. At Mount Carmel it sometimes became common in the latter half of August, and in spring usually remained until after the Louisiana Water-thrush had begun nesting.

Seiurus noveboracensis notabilis (Grinnell).

GRINNELL'S WATER-THRUSH.

Popular synonym. Wyoming Water-thrush.

Seiurus naevius notabilis "GRINNELL, MS." Ridgw. Proc. U. S. Nat. Mus. 11, March 27, 1880, 12; *Nom. N. Am. B.* 1881, No. 116a.—COUES, 2d Check List, 1882, No. 137.

HAB. Rocky Mountain district east, as a more or less common straggler, to Illinois and Indiana. Occasional on Pacific coast.

SP. CHAR. Similar to *S. noveboracensis*, but larger, and much less brown above. Wing, 3.20-3.25; tail, 2.25-2.50; bill, from nostril, .40-.50; depth at base, .25; tarsus, .80-.90; middle toe, .55-.60. Above dark grayish brown, the feathers of the pileum with indistinctly

purser white lower parts, which, though faintly tinged with pale buffy-yellow, are whiter even than in *S. motacilla*, but without a trace of the creamy tinge always observable in the latter, especially on the flanks and crissum. The upper parts are also decidedly less olive than in true *noveboracensis*. This example measures: Wing, 3.20; tail, 2.45; bill, from nostril, .42; tarsus, .90; middle toe, .55. The bill is quite appreciably stouter than in true *noveboracensis*. The superciliary stripe and suborbital spot are pale fawn-buff throughout.

A specimen from Tucson, Arizona (May 4, mus. W. Brewster), is similar in color to the type of *notabilis*, except that the streaks below are decidedly narrower, the spots on the throat much smaller, and the upper parts lighter and grayer. The tarsi are more slender, and the tail and bill much shorter. The measurements are as follows: Wing, 3.20; tail, 2.25; culmen, .52; bill, from nostril, .40; tarsus, .80; middle toe, .60.

Examples collected by me in Richland and Wabash counties, Illinois, and in Knox county, Indiana (near Wheatland), are very typical of this race.

GENUS *GEOTHYLPIS* CABANIS.

We follow the ruling of the Committee of the American Ornithologists' Union on Classification and Nomenclature in uniting under one heading the current genera *Geothlypis* and *Oporornis*, the differential characters of which are expressed in the analytical table on page 115. Under its own heading will be found a fuller diagnosis of each subgenus, and a key to the species.

SUBGENUS *Oporornis* BAIRD.

Oporornis BAIRD, Birds N. Am. 1858, 246. Type, *Sylvia agilis* WILS.

"GEN. CHAR. Bill sylvicoline, rather compressed; distinctly notched at tip; rictal bristles very much reduced. Wings elongated, pointed, much longer than the tail; the first quill nearly or quite the longest. Tail very slightly rounded; tail feathers acuminate, pointed; the under coverts reaching to within less than half an inch of their tip. Tarsi elongated, longer than the head; claws large, the hinder one as long as its digit, and longer than the lateral toes. Above olive-green; beneath yellow; tail and wings immaculate. Legs yellow.

"This group of American Warblers is very distinct from any other. The typical species is quite similar in color to *Geothlypis philadelphia*, but is at once to be distinguished by much longer

wings, more even tail, and larger toes and claws. It is also very similar to *Seiurus*, differing chiefly in the longer wings, larger claws, and absence of spots beneath." (*Hist. N. Am. B.*)

COMMON CHARACTERS. Above plain olive-green, beneath plain yellow (except on throat and jugulum, in *O. agilis* alone).

1. *O. agilis*. *Adult male*: Head, neck and jugulum ash-gray, lighter on the throat and tinged with olive on the crown; a distinct white orbital ring. *Adult female*. Throat and jugulum light smoky gray, upper head and nape olive, like the back, and yellow of lower parts paler and duller. *Young in first autumn*: Similar to the female, but throat and jugulum still duller and more or less tinged with dull yellowish.
2. *O. formosa*. *Adult male*: Crown black, the feathers tipped with ash-gray: lores and triangular patch on auriculars black; broad superciliary stripe, spot on lower eyelid, and entire lower parts rich yellow. *Adult female*: Similar to the male, but rather duller. *Young*: Like the adult female, but still duller, the black patches concealed or replaced by dusky smoky olive

Geothlypis agilis (Wils.)

CONNECTICUT WARBLER.

Popular synonym. Gray-headed Warbler.

Sylvia agilis WILS. *Am. Orn.* v. 1812, 64, pl. 39, fig. 4.—*Am. Orn. Biog.* ii, 1834, 227, pl. 138.

Trichas agilis NUTT. *Man.* 2d ed. i, 1840, 468.

Sylvicola agilis JARD.—*Am. Synop.* 1859, 63; *B. Am.* ii, 1841, 71, pl. 99.

Oporornis agilis BAIRD, *B. N. Am.* 1858, 246; ed. 1860, pl. 79, fig. 2; *Cat. N. Am. B.* 1859, No. 174; *Review*, 1865, 218.—*COUES*, *Key*, 1872, 106; *Check List*, 1873, No. 95; 2d ed. 1882, No. 139; *B. Col. Val.* 1878, 808.—*B. B. & R. Hist. N. Am. B.* i, 1874, 290, pl. 15, figs. 1, 2.—*RIDGW.* *Nom. N. Am. B.* 1881, No. 118.

Trichas tephrocotis NUTT. *Man.* 2d ed. i, 1840, 462.

HAB. Eastern United States and British Provinces, migrating northward in spring chiefly through the Mississippi Valley, and returning southward in autumn through the Atlantic States. Winter residence unknown, but probably in Gulf States, there being no extralimital record. Breeds in Manitoba, and probably elsewhere in the interior of



and very rare in the autumn; precisely the reverse being the case near the Atlantic border, where only two or three spring specimens have been announced as captured by collectors. It is possible that they go north in spring, along the valley of the Mississippi, and return in autumn through the Atlantic States." (*Hist. N. Am. B.*)

The Connecticut Warbler is a common species during the migrations, but is almost wholly confined to bushy swamps or their vicinity, and therefore easily overlooked. When found in the woods in the vicinity of swamps it usually seeks refuge in the latter if pursued. Mr. Nelson gives us the following information pertaining to this species as observed by him in the northeastern corner of the State* :—

"A rather common migrant; May 15th to 27th, and September 1st to October 1st. The species occurs in about equal numbers in spring and fall. Near Waukegan, the last of May, 1876, these birds were found frequenting a dense swampy thicket on the border of a wood, in company with *Geothlypis philadelphia* and two species of *Seiurus*. They kept close to the ground and were quite difficult to shoot, as they would dart into the thicket upon the slightest alarm. Their habits in this locality were so nearly like those of *G. philadelphia*, that, until actually in hand, it was not an easy matter to distinguish them. While confined to the house by illness, the 26th and 27th of May, Mr. Jencks had the pleasure of becoming still better acquainted with their habits. His attention was first drawn to them by hearing a loud ringing song entirely new to him. Going to the door he saw the author of the song, upon one of the lower branches of a small pine tree close to the house. The specimen was soon in his possession and proved to be this species. Afterwards, during this and the following day, he heard the song repeatedly, and obtained other specimens of the bird. Their note he describes as being a trifle harsh, but pleasant to the ear. It is delivered with force, in a clear ringing manner, slightly resembling that of *G. trichas*. Their habits and movements while about the pine trees—within twenty yards of the house—closely resembled those of *S. aurocapillus*, with which they were associated."

Until very recently, the nest and eggs of this species, or even the portion of country where it bred, were unknown. All the information that we have in the matter is from Mr. Ernest E. T. Seton, of Carberry, Manitoba, in the *Auk*, for April, 1884, pages 192 and 193, to which the reader is referred.

* See pages 100 and 101 of his "List of the Birds of Northeastern Illinois."

Geothlypis formosa* (Wils.)*KENTUCKY WARBLER.**

Sylvia formosa WILS. Am. Orn. Ill. 1811, 85, pl. 25, fig. 3.—AUD. Orn. Biog. 1, 1831, 196, pl. 38.
—NUTT. Man. 1, 1832, 399.

Myiodynastes formosa AUD. Synop. 1839, 50; B. Am. II, 1841, 19, pl. 74.

Oporornis formosus BAIRD, B. N. Am. 1858, 247; Cat. N. Am. B. 1859, No. 175; Review, 1865, 218.—COUES, Key, 1872, 106; Check List, 1873, No. 96; 2d ed. 1882, No. 140; B. N. W. 1874, 73; B. Col. Val. 1878, 309.—B. B. & R. Hist. N. Am. B. I, 1874, 293, pl. 15, fig. 3.—RIDG. Nom. N. Am. B. 1881, No. 119.

HAB. Eastern United States, chiefly west to the Alleghanies; north to Connecticut Valley, southern New York, Michigan, and Wisconsin; west to Kansas, Indian Territory, Texas, etc.; breeds throughout its United States range. Winters in Mexico and Central America, south to Panama; Cuba.

"SP. CHAR. *Adult male.* Upper parts and sides dark olive-green. Crown and sides of the head, including a triangular patch from behind the eye down the side of the neck, black, the feathers of the crown narrowly lunulated at tips with dark ash. A line from nostrils over the eye and encircling it (except anteriorly), with the entire under parts, bright yellow. No white on the tail. *Female* similar, with less black on the head. Length, 5 inches; wing, 2.95; tail, 2.25.

"The adults in autumn are exactly the same as in spring." (*Hist. N. Am. B.*)

First plumage. Remiges, rectrices, primary coverts, and alulae as in the adult. Pileum and back dull raw-umber brown, tinged with rusty on the back and scapulars; throat, jugulum, breast, and sides pale grayish fulvous, the abdomen and crissum paler and slightly tinged with yellow. *No markings of any sort about the head.*

The beautiful Kentucky Warbler is one of the most abundant of birds in the rich woods of southern Illinois. As far north as Wabash, Lawrence, and Richland counties, it is even more abundant than the Golden-crowned Thrush, though the two usually inhabit

the female must slyly leave the nest at the approach of the intruder and run beneath the herbage until a considerable distance from the nest, when joined by her mate, the pair by their evident anxiety mislead the collector as to its location. However this may be, the writer has never found a nest of this species except by accident, although he has repeatedly searched every square foot of ground within a radius of many yards of the spot where a pair showed most uneasiness at his presence.

SUBGENUS *Geothlypis* CABANIS.

Geothlypis CABANIS, Wiegmann's Archiv, 1847, i, 316, 349.—ID. Schomburgk's Reise, Guiana, 1848.

"GEN. CHAR. Bill sylvicoline, rather depressed, and distinctly notched; rectal bristles very short or wanting. Wings short, rounded, scarcely longer than the tail; the first quill shorter than the fourth. Tail long; much rounded or graduated. Legs stout; tarsi elongated, as long as the head. Olive-green above, belly yellow. Tail-feathers immaculate. Legs yellow." (*Hist. N. Am. B.*)

COMMON CHARACTERS. Above plain olive-greenish, beneath plain yellowish (except on throat and jugulum, in *G. philadelphia* and its western representative, *G. macgillivrayi*).

1. *G. trichas*. *Adult male*: Forehead, lores, and auriculars black, bordered behind by light ash-gray or grayish white, (sometimes tinged with yellowish); lower parts bright yellow, the abdomen usually dull whitish. *Adult female*: Forehead and auriculars olive-brown, like rest of upper parts, the former usually tinged with reddish brown; no gray or whitish on head, and lower parts less distinctly yellow. *Young, first plumage*: Above uniform olive-brown, beneath deep buff, or light ochraceous.
2. *G. philadelphia*. *Adult male*: Head and neck plumbeous, with more or less of a black patch on the jugulum; eyelids blackish. *Adult female*: Head smoky gray, tinged with olive; the throat pale yellowish gray; eyelids, and an indistinct post-ocular bar dull whitish or pale dingy yellowish.*

Geothlypis trichas (Linn.)

A. *trichas*.—MARYLAND YELLOW-THROAT.

Popular synonyms. Black-masked Ground Warbler; Black-cheeked Yellow-throat; Black-spectacled Warbler; Brier Wren; Yellow Brier Wren.

Turdus trichas LINN. S. N. ed. 12, i, 1766, 293.

Sylvia trichas LATH.—NUTT. Man. i, 1832, 401.—AUD. Orn. Biog. i, 1832, 120; v, 1839, 463, pl. 23.

Geothlypis trichas CABAN. M. H. i, 1850, 16.—BAIRD, B. N. Am. 1858, 241; Cat. N. Am. B. 1859, No. 170; Review, 1865, 220.—COUES, Key, 1872, 107; Check List, 1873, No. 97; 2d ed. 1882, No. 141; B. N. W. 1874, 74; B. Col. Val. 1878, 309.—B. B. & R. Hist. N. Am. B. i, 1874, 297, pl. 15, figs. 7, 8.—RIDGW. Nom. N. Am. B. 1881, No. 122.

* The western representative of this species, *G. macgillivrayi*, is very similar, but differs in proportions, the tail being decidedly longer. The male is without a solid black patch on the jugulum, and the eyelids are distinctly white, in very marked contrast with the velvety-black lores.

Sylvia marylandica WILS. Am. Orn. 1, 1808, 83, pl. 6, fig. 1; 11, 1808, 103, pl. 18, fig. 4.

Trichas marylandica NUTT. Man. ed. 2, 1, 1840, 453. —AUD. Synop. 1839, 65; B. Am. 11, 1841, 78, pl. 102.

Sylvia roscoe AUD. Orn. Biog. 1, 1832, 124, pl. 24.

Trichas roscoe NUTT. Man. 3d ed. 1, 1840, 457.

B. occidentalis. —WESTERN YELLOW-THROAT.

Popular synonyms. (Same as for the Eastern form.)

Geothlypis trichas AUD. — (Western references.)

Geothlypis trichas occidentalis BEZWE. Bull. Nutt. Orn. Club, viii, July, 1883, p. 159.

HAB. The true *G. trichas* chiefly east of the Alleghanies, or at least east of the low-land portions of the Mississippi Valley. *G. trichas occidentalis* from the Mississippi Valley to the Pacific Coast.

SP. CHAR. *Adult male.* Above olive-green, becoming browner on the nape. Fore-head, lores, orbits, auriculars, and malar region deep black; this bordered posteriorly by light ash-gray or grayish white. Chin, throat, jugulum, and breast, rich gamboge-yellow. Abdomen, sides and flanks, dull yellowish white in true *G. trichas*, yellow in *occidentalis*. *Adult female.* Much duller in color than the male, without black, gray, or white on head, which is mostly dull brownish, the pileum or auriculars, or both, sometimes tinged with reddish. Yellow of throat, etc., much duller than in the male. *Young, first plumage.* Somewhat like the adult female, but still duller in color. Lower parts dull olivaceous, anteriorly, tinged with yellow on throat, the posterior portions pale dull buff. *Young, in first fall.* Lower parts entirely light dull buff.

Wing (of male), 2.00-2.40; tail, 1.80-2.40.

We have not formally separated the two races indicated in the above synonymy and description, for the reason that at present we are not sure of their exact limits. *Occidentalis* is evidently the prevailing form in Illinois and Indiana, much the larger number of specimens having the larger size and more extensively yellow lower parts of the western form. Still there is much variation in this latter character, and it may be that both forms occur.

This merry little denizen of the brush-patches is one of the most

Geothlypis philadelphia (Wils.)**MOURNING WARBLER.**

Popular synonym. Black-throated Ground Warbler.

Sylvia philadelphia WILS. Am. Orn. ii, 1810, 101, pl. 14, fig. 6.—NUTT. Man. i, 1832, 404.—AUD. Orn. Biog. v, 1839, 78.

Trichas philadelphia JARD.—AUD. Synop. 1839, 65; B. Am. ii, 1841, 76, pl. 101.—NUTT. Man. 2d ed. i, 1840, 459.

Geothlypis philadelphia BAIRD, B. N. Am. 1858, 243; ed. 1860, pl. 79, fig. 3; Cat. N. Am. B. 1859, No. 172; Review, 1865, 226.—COUES, Key, 1872, 107; Check List, 1873, No. 98; 2d ed. 1882, No. 142; B. N. W. 1874, 75; B. Col. Val. 1878, 313.—B. B. & R. Hist. N. Am. B. i, 1874, 301, pl. 15, fig. 6.—RIDGW. Nom. N. Am. B. 1881, No. 120.

HAB. Eastern North America, breeding from northern United States (New England to Minnesota and eastern Dakota), northward; more rare in Atlantic States. Winters in southeastern Mexico and Costa Rica, and thence south to Colombia (no Guatemalan or West Indian record). Casual in Greenland.

"SP. CHAR. Wings but little longer than the tail, reaching but little beyond its base. *Adult male.* Head and neck all round, with throat and forepart of breast, ash-gray, paler beneath. The feathers of the chin, throat, and fore breast in reality black, but with narrow ashy margins more or less concealing the black, except on the breast. Lores and region round the eye dusky, without any trace of a pale ring. Upper parts and sides of the body clear olive-green; the under parts bright yellow. Tail-feathers uniform olive; first primary, with the outer half of the outer web nearly white. *Female* with the gray of the crown glossed with olive; the chin and throat paler centrally, and tinged with fulvous; a dull whitish ring round the eye. Length, 5.50; wing, 2.45; tail, 2.25.

"Specimens vary in the amount of black on the jugulum, and the purity of the ash of the throat. The species is often confounded with *Oporornis agilis*, to which the resemblance is quite close. They may, however, be distinguished by the much longer and more pointed wings, and more even tail, shorter legs, etc., of *agilis*. The white ring round the eye in the female *philadelphia* increases the difficulty of separation.

"The adult male in autumn is scarcely different from the spring bird, there being merely a faint olive-tinge to the ash on top of the head, and the black jugular patch more restricted, being more concealed by the ashy borders to the feathers; the yellow beneath somewhat deeper." (*Hist. N. Am. B.*)

In the Bulletin of the *Nuttall Ornithological Club* (Cambridge, Mass., April, 1878, p. 61) Mr. Brewster gives the following description of the immature stages of this species, taken from examples in his unrivaled collection of eastern birds:

"*First plumage. Female.* Remiges, rectrices, etc., as in adult. Rest of upper parts, with wing-coverts and sides of head, dull reddish brown, becoming almost cinnamon on the back, and tinged strongly with ashy on the pileum. Entire under parts light reddish brown, most pronounced on the abdominal and anal regions, becoming lighter on the throat, and darker, with a strong olive suffusion, on the breast and sides. No appreciable

maxillary or supra-orbital stripes. (From a specimen in my collection shot at Upton, Me., August 11, 1874. This bird was very young; in fact barely able to fly. A slight doubt exists in my mind as to its identity, for I did not actually see the parent birds feed it, though both were in the immediate vicinity and exhibited much solicitude. This specimen is separable from the corresponding stage of *G. trichas* by the ashy cast of the pileum and the absence of brownish on the sides.)

"*Autumnal plumage. Young male.* Entire upper parts olive-green, the feathers of the pileum and nape being just tipped with this color and showing plainly the ashy underneath when disarranged. Sides of head, with broad bands extending down each side of the throat and nearly meeting across the jugulum, ash, washed with greenish olive. Sides, with a broad connected band across anal region and breast, dull olive-green. Rest of under parts, with central areas of throat and jugulum, very clear rich yellow, intensifying into a spot of orange on the breast. In two specimens (both males) a yellow tipping of the feathers on the jugulum nearly conceals much black underneath, which becomes conspicuous when the plumage is slightly disarranged.

"*Autumnal plumage. Young female.* Similar to the male, but with a more olive cast to the green of the dorsal aspect, less ashy on head, and the spot on the breast of richer, deeper color, and broader diffusion. The young of both sexes in autumnal plumage have the upper and lower eye-lids conspicuous *fulvous yellow*. In one specimen (male, taken August 27) the eye-lids are *dirty white*. (From seven specimens—two females, five males—in my collection, shot at Upton, Me., August, 1874.) Irrespective of generic characters, the young of *G. philadelphia* are at once distinguishable from those of *Oporornis agilis* in corresponding stages by the total absence of ashy on the central regions of the throat, jugulum, and breast. So marked is the difference that obtains in this respect, that I am easily able to separate the two species, when lying side by side, at a distance of fifteen or twenty feet."

During the spring migration, I have found this bird to be very common, on one or two occasions; and I have also obtained specimens in the fall. Early in May, 1881, they were abundant near Wheatland, Indiana, most of them being observed about brush-piles in a clearing and along fences in the immediate vicinity. In the early part of June, 1871, I saw a pair in a thicket along the border of Fox Prairie in Richland county, and presumed at the time that

"The precise systematic position of the genus *Icteria* is a matter of much contrariety of opinion among ornithologists; but we have little hesitation in including it among the *Sylvicolidæ*. It has been most frequently assigned to the *Vireonidæ*, but differs essentially in the deeply cleft inner toe (not half united as in *Vireo*), the partially booted tarsi, the lengthened middle toe, the slightly curved claws, the entire absence of notch or hook in the bill, and the short, rounded wing with only nine primaries. The wing of *Vireo*, when much rounded, has ten primaries,—nine only being met with when the wing is very long and pointed.

"Of this genus only one species is known, although two races are recognized by naturalists, differing in the length of the tail." (*Hist. N. Am. B.*)

Icteria virens (Linn.)

YELLOW-BREASTED CHAT.

Popular synonym. Yellow Mockingbird.

Turdus virens LINN. S. N. ed. 10, i, 1758, 171.

Icteria virens BAIRD, Review, 1865, 228.—COUES, Key, 1872, 108; Check List, 1873, No. 100; 2d ed. 1882, No. 144; B. N. W. 1874, 77; B. Col. Val. 1878, 320.—B. B. & R. Hist. N. Am.

B. i, 1874, 307, pl. 15, fig. 12.—RIDGW. Nom. N. Am. B. 1881, No. 123.

Muscicapa viridis GMEL. S. N. i, 1788, 936.

Icteria viridis BONAP.—NUTT. Man. i, 1832, 299; 2d ed. i, 1840, 339.—AUD. Orn. Biog. ii, 1834, 223; v, 1839, 433, pl. 137; E. Am. iv, 1842, 160, pl. 244.—BAIRD, B. N. Am. 1858, 248;

Cat. N. Am. B. 1859, No. 176.

Pipra polyglotta WILS. Am. Orn. i, 1808, 90, pl. 6, fig. 1.

HAB. Eastern United States, north to the Connecticut Valley and Great Lakes; west to the border of the Great Plains; winters in Eastern Mexico and Guatemala.

"SP. CHAR. Third and fourth quills longest; second and fifth little shorter; first nearly equal to the sixth. Tail graduated. Upper parts uniform olive-green; under parts, including the inside of wing, gamboge-yellow as far as nearly half-way from the point of the bill to the tip of the tail; rest of under parts white, tinged with brown on the sides; the outer side of the tibiae plumbeous; a slight tinge of orange across the breast. Forehead and sides of the head ash, the lores and region below the eye blackish. A white stripe from the nostrils over the eye and involving the upper eyelid; a patch on the lower lid, and a short stripe from the side of the lower mandible, and running to a point opposite the hinder border of the eye, white. Bill black; feet brown. *Female* like the male, but smaller; the markings indistinct; the lower mandible not pure black. Length, 7.40; wing, 3.25; tail, 3.30. Nest in thickets, near the ground. Eggs white, spotted with reddish."

"Both sexes in winter apparently have the base of lower mandible light-colored, the olive more brown, the sides and crissum with a strong ochraceous tinge." It is this plumage that has been recognized as *I. velasquezi*.

First plumage. Remiges, rectrices, etc., as in the adult. Head superiorly and laterally, uniform grayish olive, with a barely appreciable whitish supraloral line and orbital ring, and without black markings. Whole throat pale ash-gray (almost white on the chin), stained laterally and anteriorly with yellow; entire breast gamboge-yellow, obscured with olivaceous gray across the jugulum (probably entire gray at first, the yellow feathers being probably the beginning of the first moult). Abdomen white; flanks and crissum pale buff.

In most parts of Illinois the Yellow-breasted Chat is an abundant bird in suitable localities. These consist of the borders of thickets, briar-patches, or wherever there is a low, dense growth of bushes—the thornier and more impenetrable the better. Probably none of our birds except the Mockingbird itself possess a greater variety of notes than this loquacious species, on which account it is not unfrequently known as the “Yellow Mockingbird.” All its notes appear to be original, however, although some of them suggest very strongly those of other creatures. Thus, one of them resembles closely the barking of a pup; another, the mewing of a cat; and a third, the whistling sound produced by a duck’s wings when flying, only much louder. This last is the sound most frequently heard, and may be recognized at a distance of a quarter of a mile, or more, the other notes being interludes between repetitions of the whistling song. The latter can be very perfectly imitated by a good whistler, and the bird thereby brought instantly to the spot, where he dodges in and out among the bushes, uttering constantly, if the whistling be repeated, a deep-toned, emphatic *tac*, or hollow, resonant *meow*. During the height of the breeding season the male becomes exceedingly animated and tuneful, ascending, by short flights and jumps, from branch to branch, to the top of a small tree, or even to the

Mr. Nelson says that the Yellow-breasted Chat is a "a regular but not common summer resident" in Cook county, arriving May 1 to 10, and departing the last of August.

GENUS SYLVANIA NUTTALL.

Sylvania NUTT. Man. Land B. 1832, 290. Type by elimination *Muscicapa selbii* AUD., = *Motacilla mitrata* GMEL.

Wilsonia BONAP. Geog. and Comp. List, 1838, 23. Same type.

Myiodioides AUD. Synop. 1839, 48. Same type.

"GEN. CHAR. Bill broad, depressed; the lateral outlines a little concave; the bristles reaching down not quite half-way from nostrils to tip. Culmen and commissure nearly straight to near the tip. Nostrils oval, with membrane above. Wings pointed, rather longer than the nearly even but slightly rounded tail; first quill shorter than the fourth, much longer than the fifth; the second and third quills longest. Tarsi rather lengthened the scutellar divisions rather indistinct; the middle toe without claw, about three fifths the tarsus.

"This genus is distinguished from *Setophaga* mainly by stouter feet and longer toes; shorter and more even tail, narrower bill, etc. The species are decidedly muscicapine in general appearance, as shown by the depressed bill with bristly rictus. The type, *M. mitrata*, is very similar in character of bill to *Dendroica castanea*, but the wings are much shorter; the tail longer and more graduated; the legs and hind toe longer, and the first primary shorter than the fourth (.15 of an inch less than the longest), not almost equal to the longest. The species are plain olive or plumbeous above, and yellow beneath. They may be grouped as follows:" (*Hist. N. Am. B.*)

A Inner webs of tail-feathers with white patches.

1. *S. mitrata*. Above plain olive-green, beneath pure yellow. *Adult male*: Head, neck, and jugulum deep black, the forehead and auriculars gamboge-yellow. *Adult female*: Black head-markings of the male usually merely indicated, sometimes absent, and rarely so extensive or deeply black as in that sex. *Young*: No black whatever about the head.
2. *S. microcephala*. Above olive-green, beneath pale yellowish; wing with two white bands.

B Inner webs of tail-feathers without any white markings:

3. *S. pusilla*. Above plain olive-green, beneath continuous yellow. *Adult male*: Crown with a patch of glossy blue-black. *Adult female*: Similar to the male, but black crown-patch usually less distinct, sometimes nearly obsolete. *Young*: No trace of black on crown; otherwise, like the adult female.
4. *S. canadensis*. Above plumbeous gray, beneath yellow, the crissum white; a yellow orbital ring. *Adult male*: Forehead, crown and jugulum, spotted with black. *Adult female*: Similar to the male, but black spots of head, etc., much less distinct. *Young in first autumn*: Similar to the adult female, but black markings wanting; those of the jugulum, however, indicated by deltoid or cuneate streaks of olive-grayish or dusky; yellow supraloral bar obsolete.

Sylvania mitrata* (GMEL.)*HOODED WARBLER.**

Popular synonyms. Black-headed Warbler; Hooded Flycatching Warbler; Mitred Warbler; Selby's Warbler.

Motacilla mitrata GMEL. S. N. 1, 1788, 977.

Sylvia mitrata LATH.—NUTT. Man. 1, 1832, 372.—AUD. Orn. Biog. ii, 1834, 68, pl. 60.

Wilsonia mitrata BF. Comp. List. 1836, 23.—RIDGW. Proc. U. S. Nat. Mus. 1890, 178, No. 124.

Sylvania mitrata NUTT. Man. 2d ed. 1, 1840, 333.

Myiodiocetes mitratus AUD. Synop. 1839, 48; B. Am. ii, 1841, 12, pl. 71 ("*mitrata*").—BAIRD,

B. N. Am. 1838, 292; Cat. N. Am. B. 1859, No. 211; Review, 1865, 390.—COUES, Key, 1872,

109; Check List 1873, No. 101; 2d ed, 1882, No. 146; B. N. W. 1874, 78; B. Col. Val. 1878,

324.—B. B. & R. Hist. N. Am. B. 1, 1874, 314, pl. 15, figs. 10, 11. RIDGW. Nom. N. Am. B.

1881, No. 124.

Sylvia cucullata WILS. Am. Orn. iii, 1811, 101, pl. 28, fig. 3.

Muscicapa selbyi AUD. Orn. Biog. i, 1831, 46, pl. 9.

Muscicapa selbia NUTT. Man. 1, 1832, 296.

HAB. Eastern United States, north to Connecticut and Hudson River Valleys, western New York, and Michigan; breeding throughout its summer range; casual to Massachusetts; west to Kansas. Winters in Cuba, Jamaica, eastern Mexico, and Central America, south to Panama, Bermudas.

"SP. CHAR. Male. Bill black; feet pale yellow. Head and neck all round and forepart of the breast black. A broad patch on the forehead extending round on the entire cheeks and ear-coverts, with the under parts bright yellow. Upper parts and sides of the body olive-green. Greater portion of inner web of outer three tail-feathers white.

"Female similar, but without the black; the crown like the back"; the forehead yellowish; the sides of the head yellow, tinged with olive on the lores and ear-coverts. Throat bright yellow.

"Length, 5.00; wing, 2.75; tail, 2.55. (Skin.)" (Hist. N. Am. B.)

"Mr. C. Hart Merriam, in his late "Review of the Birds of Connecticut" (pp. 25 and 29), rectifies an error in the recent descriptions

the black on the hood and throat of the female approach the purity of those parts in the male." (E. A. MEARNs, in *Bull. Nutt. Orn. Club*, ii, pp. 72, 72.)

In all rich damp woods, both in Illinois and Indiana, I have found the beautiful Hooded Warbler a more or less common species. In the woods of Knox and Gibson counties, Indiana, immediately opposite Mount Carmel, it is particularly abundant, so much so, in fact, as to be one of the most characteristic species.

Sylvania pusilla (Wils.)

WILSON'S WARBLER.

Popular synonyms. Green Black-capped Flycatcher or Flycatching Warbler; Wilson's Black-cap; Black-capped Yellow Warbler.

Muscicapa pusilla WILs. Am. Orn. iii, 1811, 103.

Wilsonia pusilla BONAP. Comp. List, 1838, 23.—RIDGW. Proc. U. S. Nat. Mus. 1880, 173, No. 125.

Sylvania pusilla NUTT. Man. 2d ed. i, 1840, 335.

Myiodiocetes pusillus SCL.—BAIRD, B. N. Am. 1858, 293; Cat. N. Am. B. 1859, No. 213; Review, 1865, 240.—COUES, Key, 1872, 109; Check List, 1873, No. 102; 2d ed. 1882, No. 147; B. N. W. 1874, 79, 232; B. Col. Val. 1878, 326.—B. B. & R. Hist. N. Am. B. i, 1874, 317, pl. 16, figs. 3, 4.—RIDGW. Nom. N. Am. B. 1881, i, No. 125.

Sylvia wilsonii BONAP. Jour. Phil. Ac. iv, 1824, 179.—NUTT. Man. i, 1832, 438.

Muscicapa wilsonii AUD. Orn. Biog. ii, 1834, 148, pl. 124.

Myiodiocetes wilsonii AUD. Synop. 1839, 50; B. Am. ii, 1841, 23, pl. 75.

HAB. All of North America except Pacific coast, where replaced by a brighter colored (and otherwise different) race, var. *pileolata**; breeding from extreme northern border of United States (?) northward to Hudson's Bay and Alaska, where reaching to the coast of Bering's Sea, and across to eastern Siberia. Winters in eastern Mexico, Guatemala, and south to Chiriqui.

SP. CHAR. Forehead, line over and around the eye, and under parts generally, bright yellow. Upper parts olive-green; a square patch on the crown lustrous black. Sides of body and cheeks tinged with olive. No white on wings or tail. Female similar, the black of the crown duller, or sometimes replaced by olive-green. Length, 4.75; wing, 2.25; tail, 2.30.

This little bird is found in Illinois only during its migrations, and, like other species, varies greatly in numbers in different years, being scarcely to be found some seasons and abundant at others. It is, however, an inconspicuous species, and may readily pass unnoticed. Its summer home is in the colder regions of the far North, where it breeds from Labrador to Alaska, and north to the limit of tree growth.

*See *Hist. N. Am. B.* i, p. 319.

Sylvania canadensis (Linn.)**CANADIAN WARBLER.**

Popular synonyms. Canada Flycatcher; Necklaced Warbler; Bonaparte's Warbler; Canadian Flycatching Warbler.

Muscicapa canadensis LINN. S. N. ed. 12, 1, 1766, 327.—WILS. Am. Orn. III, 1811, 100, pl. 26, fig. 2.—AUD. Orn. Biog. II, 1834, 17, pl. 103.

Myiodytes canadensis AUD. Synop. 1839, 49; B. Am. II, 1841, 14, pl. 72.—BAIRD, B. N. Am. 1858, 294; Cat. N. Am. B. 1859, No. 214; Review, 1868, 299.—COOPER, Key, 1872, 109; Check List, 1873, No. 193; 2d ed. 1882, No. 149; B. N. W. 1874, 80; B. Con. Val. 1878, 323.—B. B. & R. Hist. N. Am. B. I, 1874, 320, pl. 16, fig. 6.—RIDG. Nom. N. Am. B. 1881, No. 127.

Sylvia pardalina BONAP. Jour. Phil. Ac. IV, 1824, 179.—NUTT. Man. 1, 1832, 372.

Muscicapa bonapartei AUD. Orn. Biog. II, 1831, 27, pl. 5 — young!.

Setophaga bonapartei SW. & RICH. F. B. A. II, 1831, 226, pl. 47.

Myiodytes bonapartei AUD. Synop. 1839, 49; B. Am. II, 1841, 17, pl. 73.—BAIRD, B. N. Am. 1858, 295; Cat. N. Am. B. 1859, No. 215.

Sylvania bonapartei NUTT. Man. 2d ed. 1, 1840, 332.

HAB. Eastern North America, breeding from northern border of United States (including higher portion of Middle States), northward. Winters in Mexico, Central America, and northern South America to Ecuador.

"SP. CHAR. Upper part bluish ash; a ring around the eye, with a line running to the nostrils, and the whole under part (except the tail-coverts, which are white), bright yellow. Centres of the feathers in the anterior half of the crown, the cheeks, continuous with a line on the side of the neck to the breast, and a series of spots across the forepart of the breast, black. Tail-feathers unspotted. *Female* similar, with the black of the head and breast less distinct. In the *young* obsolete. Length, 5.34; wing, 2.67; tail, 2.59." (*Hist. N. Am. B.*)

"First plumage. Female. Remiges, rectrices, etc., similar to the adults. Rest of the upper parts, including wing-coverts and sides of head, uniform deep dull cinnamon; the greater coverts tipped with fulvous. Throat, breast, and sides very light cinnamon, tinged with olive. Anal and abdominal regions pale sulphur-yellow. No conspicuous spots, stripes, or markings anywhere. (From a specimen in my collection shot at Upton, Me., August 4, 1874. This bird was so young as to be scarcely able to fly, and with the rest of the brood, was attended by the female parent.)

The fully adult male is a very handsome and conspicuous bird, though far less so than his relative, the Hooded Warbler; and his song is one of the prettiest that we know of, having some resemblance to that of the Water-thrush.

"In Vermont," says Mr. Charles S. Paine*, "the Canada Flycatcher is a common summer visitant, and is first seen about the 18th of May. They do not spread themselves over the woods, like most of our small fly-catching birds, but keep near the borders, where there is a low growth of bushes, and where they may be heard throughout the day, singing their regular chant. A few pairs may occasionally be found in the same neighborhood. At other times only a single pair can be found in quite a wide extent of territory of similar character. They build their nests, as well as I can judge, about the first of June, as the young are hatched out and on the wing about the last of that month, or the first of July. I have never found a nest, but I think they are built on the ground. They are silent after the first of July, and are rarely to be seen after that period."

Nests found at Lynn, Mass., by Mr. Geo. O. Welch, were built in tussocks of meadow-grass, in swampy woods or logs; they were constructed of pine needles, strips of loose grape-vine bark, dry leaves, etc., and lined with fibrous dry roots. The eggs were five in number, clear white, marked with a wreath of spots of various shades of rich brown, purple, and violet.

GENUS *SETOPHAGA* SWAINSON.

Setophaga SWAINSON, Zool. Jour. iii, Dec. 1827, 360. Type *Muscicapa rutacilla* LINN.

"GEN. CHAR. Bill much depressed, the lateral outlines straight toward tip. Bristles reach half-way from nostril to tip. Culmen almost straight to near the tip; commissure very slightly curved. Nostrils oval, with membrane above them. Wings rather longer than tail, pointed; second, third, and fourth quills nearly equal; first intermediate between fourth and fifth. Tail rather long, rather rounded; the feathers broad, and widening at ends, the outer web narrow. Tarsi with scutellar divisions indistinct externally. Legs slender; toes short, inner cleft nearly to base of first joint, outer with first joint adherent; middle toe without claw, not quite half the tarsus." (*Hist. N. Am. B.*)

Setophaga ruticilla (Linn.)

AMERICAN REDSTART.

Popular synonyms. Black-and-red Warbler; Fan-tail Warbler, or Flycatcher; Yellow-tailed Warbler or Flycatcher.

Motacilla ruticilla LINN. S. N. ed. 10, i, 1758, 186.

Muscicapa ruticilla LINN. S. N. ed. 12, i, 1766, 326.—WILS. Am. Orn. i, 1808, 103, pl. 6, fig. 6; v, 119, pl. 45, fig. 2.—AUD. Orn. Biog. i, 1831, 202; v, 1839, 428, pl. 40; Synop. 1839, 44; B. Am. i, 1840, 240, pl. 68.

* In *Hist. N. Am. B.* i, pp. 320, 321.

Mniotilta (Sylvania) ruticilla NUTT. MAN. 4, 1832, 291.

Setophaga ruticilla SW. - BAIRD, B. N. AM. 1858, 297; CAT. N. AM. B. 1859, No. 217; Review, 1865, 256. - COOPER Key, 1872 116; CHECK LIST, 1878, No. 104; 2d ed, 1892, No. 152; B. N. W. 1874, 81, 232; B. COL. VAL. 1878 337. - B. B. & R. Hist. N. AM. B. I, 1874, 323 pl. 16, figs. 1, 5. - RIDGWAY, NOM. N. AM. B. 1881, No. 128.

HAB. Eastern North America, west regularly to and including the Rocky Mountains, to the borders of the Great Basin, straggling to the Pacific coast; breeds throughout its summer range, which extends from the Gulf States north to Ft. Simpson and Hudson's Bay. Winters in West Indies, Mexico, Central America, and northern South America, to Ecuador.

"SP. CHAR. *Male.* Prevailing color black. A central line on the breast, the abdomen and under tail-coverts white; some feathers in the latter strongly tinged with dark brown. Bases of all the quills except the inner and outer and basal half of all the tail-feathers except the middle ones, a patch on each side of the breast and the axillary region, orange-red, of a vermillion shade on the breast. *Female* with the black replaced by olive-green above, by brownish white beneath, the red replaced by yellow; the head tinged with ash; a grayish white lore and ring round the eye. Length 5.25; wing, 2.50; tail, 2.45.

"The young male in early autumn greatly resembles in plumage the adult female, but has the upper tail-coverts and tail deep black, sharply contrasted with the olive of the rump, instead of having the upper tail-coverts olive, the tail simply dusky; in addition the back is more greenish olive, and the abdomen and crissum pure white. The male does not obtain the perfect adult plumage until about the third year." (*Hist. N. Am. B.*)

Although so very abundant as to be, like the Red-eyed Vireo, a nuisance to the collector who has to shoot his warblers at random in the tall tree-tops, the Redstart is by no means a well known bird to the general observer. This arises from the fact that it inhabits almost exclusively thick woodlands, where it usually keeps well up in the trees. None of the numerous family of war-

FAMILY VIREONIDÆ.—THE VIREOS.

"The essential features of this family appear to consist in the combination of the dentirostral bill, notched in both mandibles; the ten primaries (except *Vireosylvia*), of which the outer is usually from one fourth to one half the second; the rather short, nearly even tail, with narrow feathers, and the great amount of adhesion of the anterior toes,—the whole basal joint of the middle being generally united on both sides to the adjacent joints, and decidedly shorter than the basal of inner or two basal of outer. The outer lateral toe is generally appreciably longer than the inner, reaching considerably beyond the base of the middle claw. The tarsi are always distinctly scutellate anteriorly. The young are never spotted, or streaked as in the Thrushes; nor, indeed, do the adults exhibit such markings.

"The *Vireonidæ* are peculiar to the New World, and are widely distributed, although but one genus belongs to the United States." (*Hist. N. Am. B.*)

GENUS VIREO VIEILLOT.

Vireo VIEILL, Ois. Am. Sept. i, 1807, 83. Type, *Muscicapa noveboracensis* GMEL.

"No great violence will be done by considering all the American Vireos as belonging to one genus, divisible into three subgenera, as, however different the extremes of the series may be from each other, the gradation is quite complete.

"The North American species take a wide range during their southern winter migration, only paralleled in this respect by the *Sylviolidæ*; they do not visit the West Indies, save as very rare stragglers to Cuba (*V. olivaceus*, *solitarius*, *flavifrons*, and *noveboracensis*). They all have a melodious song, and, so far as known,

make a deep nest, suspended by its upper edge between the forks of a horizontal twig. The eggs are white, generally with a few reddish or brown blotches.

"Quite a number are characterized by having the eyes white, red, or yellow." (*Hist. N. Am. B.*)

Analysis of Subgenera.

Vireosylva. Bill compressed, narrow; culmen and commissure straight, the tip abruptly curved (or, if this is not the case, there is no trace of light bands on the wing; see section "L"). Superciliary stripe continued back to the occiput. No trace of light bands on the wing. No conspicuous ring round the eye.

Laniivireo. Bill compressed, stout; culmen arched from the base, commissure curved. Superciliary stripe stopping at posterior angle of the eye and curving under it, enclosing the eye in a conspicuous orbital ring, interrupted only in front. Two conspicuous white bands on the wing.

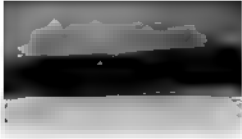
Vireo. Bill stout, scarcely compressed, sub-cylindrical. First primary not spurious or, if so, not acute.

SUBGENUS *Vireosylva* BONAPARTE.

Vireosylva BONAP. Comp. List, 1838, 26. Type, *Muscivora olivacea* Linn.

SUBGEN. CHAR. "Wings long and pointed, one third or one fourth longer than the nearly even or slightly rounded tail. First quill very small (less than one third the second), sometimes apparently wanting. Second quill longer than the seventh, much longer than the secondaries. Tarsi short (scarcely extending .60 of an inch); toes rather long. Body slender and elongated. Bill slender, narrow, straight; the culmen straight for its basal half, the commissure quite straight; light horn-color, paler beneath. Feet weak." (*Hist. N. Am. B.*)

COMMON CHARACTERS. Above plain olive, without distinct wing markings, the pileum more grayish, contrasting more or less strongly with the color of the back; a more or less distinct superciliary stripe of whitish, and beneath it a rather indistinct dusky streak before and behind the eye. Lower parts whitish, the throat and axillars, and sides of



- a. Pileum bordered along each side by a dusky line. Wing more than 3 inches.
 1. *V. olivacea*. Above olive-green, the pileum slate-gray; beneath white medially the sides olive-greenish; crissum scarcely tinged with yellow; inner edges of quills white.
 2. *V. flavoviridis*.* Above yellowish olive-green, the pileum ash-gray; beneath white medially, bright greenish olive-yellow laterally, the crissum, lining of wings, and inner edges of quills light yellow.
- b. Pileum without dusky border; wing less than three inches.
 3. *V. philadelphia*. Above grayish green the pileum gray; beneath sulphur-yellow, more whitish on the chin and abdomen.
- B. First primary well developed, and exposed (.50 of an inch, or more, long). Wing less than 3 inches.
 4. *V. gilva*. Above olive-gray, the crown not conspicuously different; beneath whitish, the sides tinged with dull buffy.

α gilva. Wing, 2.65-2.90; tail, 2.20-2.54; bill from nostril, .30-.35. Eastern United States.

β swainsoni. Wing, 2.70-3.00; tail, 2.20-2.60; bill from nostril, .25-.28. Bill more depressed, and colors grayer, with less of a buffy cast on sides, etc Western United States.

Vireo olivaceus (Linn.)

RED-EYED VIREO.

Popular synonyma. Red-eyed Greenlet; Red-eyed Flycatcher.

Muscicapa olivacea LINN. S. N. ed. 12, 1, 1766, 327 (part).—WILS. Am. Orn. II, 1810, 55, pl. 10 fig. 3.

Vireo olivaceus VIEILL.—NUTT. MAN. 1, 1832, 312.—AUD. Orn. Biog. II, 1834, 287, pl. 150, Synop. 1839, 162; B. AM. IV, 1842, 155, pl. 243.—BAIRD, B. N. AM. 1853, 331; Cat. N. AM. B. 1859, No. 240.—COUES, Key, 1873, 120; Check List, 1873, No. 122; 2d ed. 1882, No. 170; B. N. W. 1874, 96; B. Col. Val. 1878, 495.

Vireosylva olivacea BP.—*Vireosylva olivacea* BAIRD, Review, 1866, 333.—B. B. & R. Hist. N. AM. B. I, 1874, 363, pl. 17, fig. 2.

HAB. Eastern North America, north to "Fur Countries;" west to Rocky Mountains, or even beyond, especially along northern border of United States; winters from Florida and Cuba to Trinidad and Colombia, but not in West Indies, except Cuba; accidental in Greenland and even in England.

"BP. CHAR. (No. 1, 418 male, Carlisle, Penn., May, 1844.) Upper parts olive-green. Top of head from bill to nape, ash-color. A white line from nostrils above and beyond the eye, bordered above by a dusky line forming the edge of the ash cap, and below by a similar, perhaps paler, loreal and post-ocular cheek-stripe. Beneath, including tibiae, white, with perhaps a tinge of olivaceous ash across the breast; the sides of the neck like the back; sides of the body with a faint wash of olive. Axillars and crissum faintly

* This is a Central American and Mexican species, reaching its normal northern limit in the lower Rio Grande valley in Texas. It has been taken however, on the Canadian shore of the Lower St. Lawrence, and may possibly occur as a straggler in Illinois.

tinted with sulphur-yellow; lining of wings and its edge, the latter especially nearly white. Quills blackish brown, edged externally, except at ends of primaries, with olive; internally with white. Tail-feathers lighter brown, edged externally like the back, internally with pale olivaceous white. Bill dusky above, pale below; tarsi plumbeous; iris red. Length, 6.33; extent of wings, 10.25; wing, 3.33; tail, 2.50.

"Female similar, but duller in plumage." (*Hist. N. Am. B.*)

Taking the country at large, the Red-eyed Vireo is perhaps the most abundant woodland species. It is the *bête noir* of the collector, who, during the "warbler season" daily, and much to his disgust, sacrifices a greater or less number of individuals; indeed it is a common saying that a "Red-eyed Vireo can make himself look and act like any sort of warbler." It is probable that we have not a more beneficial bird than this species, noxious and destructive insects of numerous kinds constituting his principal food. Seeking for these is his constant occupation, as he hops along a branch, now peering into some crevice of the bark or nook among the foliage, even uttering his pretty song during the interval between swallowing the last worm and finding the next. "The tender and pathetic utterances of this Vireo, uttered with so much apparent animation, to judge from their sound, are in striking contrast to the apparent indifference or unconsciousness of the little vocalist who, while thus delighting the ear of the listener, seems to be all the while bent on procuring its daily supply of food, which it pursues with unabated ardor. (BREWER.)

"This Vireo," says Dr. Brewer,* "builds the pensile nest of its race, suspending it from the fork of two or more twigs of a forest tree, at various heights of from five to fifty feet from the ground.

Vireo philadelphicus (Cass.)**PHILADELPHIA VIREO.**

Popular synonyms. Philadelphia Greenlet; Brotherly-love Vireo.

Vireosylva philadelphia CASS. Proc. Phil. Ac. 1851, 153, pl. 10, fig. 2.—BAIRD, Review, 1866, 340.—B. B. & R. Hist. N. Am. B. i, 1874, 367, pl. 17, fig. 4.—RIDGW. Nom. N. Am. B. 1882, No. 138.

Vireo philadelphicus BAIRD, B. N. Am. 1858, 335; ed. 1860, pl. 78, fig. 3; Cat. N. Am. B. 1859, No. 244.—COUES, Key, 1872, 120; Check List, 1873, No. 124; 2d ed. 1882, No. 173; B. N. W. 1874, 97; B. Col. Val. 1878, 492.

HAB. Eastern North America, chiefly west of the Alleghanies, north to "Fur Countries;" breeding chiefly north of the United States, and wintering in Central America (Guatemala to Costa Rica). Not recorded from Mexico or West Indies.

"SP. CHAR. (No. 20,643 male.) Above dark olive-green, tinged with plumbeous ash, except on the rump; top of head and nape purer plumbeous ash, not edged with dusky, the line of demarcation indistinct. Beneath light sulphur-yellow, paler and almost white on chin and middle of abdomen; sides more olivaceous. A whitish stripe from bill over eye, as also a patch beneath it and the eyelids. A dusky loreal and post-ocular spot. Quills and rectrices brown, edged externally with olive, internally with whitish; the larger coverts with paler outer edges. Bill blackish, paler plumbeous below. Legs plumbeous. Spurious outer or first quill (seen in *gilvus*) wanting; the outer about equal to fifth; third longest; second and fourth not much shorter. Total length, 4.80; wing, 2.65; tail, 2.25.

"Specimens vary somewhat in purity of tints, and especially in intensity of yellow of under parts, which color is deeper in autumnal skins." (*Hist. N. Am. B.*)

The Philadelphia Vireo is a common, or in some seasons abundant, migrant, but owing to its plain colors may very easily be overlooked, or mistaken for some species of warbler. It is probable that this species breeds in the northern portion of the State; at least this probability is strongly suggested by the following statement, quoted from Mr. Nelson's list (pp. 102, 103):

"A common migrant; May 15th and 25th, and September 5th to 25th. While passing in the spring these birds frequent either willow thickets or high woods. They were so numerous near Waukegan about the 20th of May, 1876, that a dozen specimens might have been obtained in an hour. The first of July, 1874, I found two pairs of these birds in a dense willow thicket bordering Mazon Creek, about sixty miles south of Chicago. Upon my approach the birds showed great anxiety, uttering a short complaining cry, and coming within a few feet of me. That they had young in the

vicinity I was sure, but owing to the character of the covert they were not found. Specimens of this species may invariably—as far as my experience goes—be separated from those of *V. gilvus* by the greater intensity of yellow on the former, as well as by the quill characters."

Vireo gilvus (Vieill.)

WARBLING VIREO.

Popular synonyms. Warbling Greenlet, or Flycatcher.

Muscicapa gilva VIEILL. Ois. Am. Sept. 1, 1807, 65, pl. 34.

Vireo gilvus BP.—NUTT. Man. i. 1832, 308.—AUD. Orn. Biog. ii. 1834, 114, pl. 118; Synop. 1839, 161; B. Am. iv. 1842, 149, pl. 211.—BAIRD, B. N. Am. 1858, 335; Cat. N. Am. B. 1859, No. 245.—COUES, Key, 1872, 120; Check List, 1873, No. 125; 2d ed. 1882, No. 174; E. N. W. 1874, 97; B. Col. Val. 1878, 501.

Vireosylva gilva CASS.—BAIRD, Review, 1864, 542.—B. B. & B. Hist. N. Am. B. i. 1874, 383, pl. 17, fig. 3.—RIDGW. Nom. N. Am. B. 1881, No. 129.

Muscicapa melodia WILS. Am. Orn. v. 1812, 65, pl. 42, fig. 2.

HAB. Eastern North America, north to Fort Garry; winter habitat unknown, but probably Gulf States, there being no extra-limital record. In the Western United States replaced by a slightly grayer, smaller-billed race, the *V. swainsoni* of BAIRD (B. N. Am. 1858, 336, in text), of identical habits.

"SP. CHAR. (No. 1,017 female.) Above olive-green, strongly glossed with ashy, the head and nape above more distinctly ashy, but without decided line of demarcation behind, and without dusky edge; rump pure olive. Stripe from nostrils over eye to nape, eyelids, and space below eye, creamy white. A rather dusky postocular and loreal spot, the latter not extending to the bill. Under parts white, with tinge of greenish yellow (occasionally of creamy fulvous or buff), especially on breast; sides more olivaceous. Crissum and axillars scarcely more yellowish. Quills and rectrices wood-brown, edged internally with whitish, externally with olivaceous, except perhaps on longer primaries. Edge of wing white. Larger wing-coverts grayish brown, with paler edges, and no trace of olivaceous. Bill horn color above, paler below.

"This Vireo, more than any other of its genus, if not exclusively, is to a large extent a resident of villages, towns, and even cities. It is by far the sweetest singer that ventures within their crowded streets and public squares,—although Mr. Cassin gives his preference to the notes of the Red-eyed,—and the melody of its song is exquisitely soft and beautiful. It is chiefly to be found among the tall trees, in the vicinity of dwellings, where it seems to delight to stay, and from their highest tops to suspend its pensile nest. It is especially abundant among the elms of Boston Common, where at almost any hour of the day, from early in the month of May until long after summer has gone, may be heard the prolonged notes of this, one of the sweetest and most constant of our singers. Its voice is not powerful, but its melody is flute-like and tender. Throughout the last of May, and in June and July, their charming song may be heard amid the din of the city, from earliest dawn till nightfall, and rarely ceases even in the noontide heat, when all other birds are silent. It is ever in motion, while thus singing; and its sweetest notes are given forth as it moves among the tree-tops in search of insects. It is not only one of our most constant singers, but it remains musical almost until its departure for the South in October."

To our mind, the song of this species is characterized more by its air of happy contentment than by any other special quality, and we have never heard one whose song sounded at all "flute-like;" yet it is, withal a very pretty and agreeable performance.

SUBGENUS *Lanivireo* BAIRD.

Lanivireo BAIRD, B. N. Am. 1858, 329 (s. g.); Review, May 21, 1866, 326, 345. Type, *Vireo flavifrons* VIEILL.

"SUBGEN. CHAR. Body stout, head broad. Bill short and stout, broad at the base, the culmen curved from the base, the commissure considerably arched. Bill blue-black. Feet stout. Type, *V. flavifrons*." (*Hist. N. Am. B.*)

This genus includes a group of two species, one of which is exclusively eastern, while the other extends entirely across the continent, though differentiated into several strongly marked races in separate parts of its habitat. The two species occurring in the Atlantic Province may be distinguished as follows:

COMMON CHARACTERS. Orbital ring and supraloral streak, yellow or white; two broad white bands across wing. Upper parts olive-greenish, the wings and tail bluish.

1. Introduction - Explain the purpose of the report and the scope of the investigation. State the objectives of the study and the methods used to collect and analyze data.
2. Background - Provide a brief overview of the topic and the context in which the investigation was conducted. Discuss any relevant literature or previous studies that inform the current research.
3. Methodology - Describe the research design, data collection methods, and analysis techniques used in the study. Explain how the data was gathered and how it was processed and analyzed.
4. Results - Present the findings of the investigation, including any statistical analysis or other quantitative data. Discuss the trends and patterns observed in the data and how they relate to the research objectives.
5. Conclusion - Summarize the key findings of the study and discuss their implications. Provide recommendations for future research and any practical applications of the findings.

Vireo flavifrons (Vireo)**FOLLOW THE LEADER**

Synonymy. *Isotriaena* *cf.* *isotriaena*.

[illegible]

His father's name is James Smith. He is a white male, born in the United States, married, and has two children. He is a member of the United Methodist Church and is a member of the local church in the community. He is a member of the local church in the community.

[illegible]

**N. sphenura* primary evident; second quill longest; first a little shorter than third.
 *Length, 5.00; wing, 2.00; tail 2.00; difference of longest and innermost quills, .50;
 tarsus, .75.

1. The following are the names of the people who were present at the meeting:

Vireo solitarius (Wils.)**BLUE-HEADED VIREO.**

Popular synonyms. Solitary Greenlet, or Vireo; Blue-headed Greenlet.

Muscicapa solitaria WILS. Am. Orn. ii, 1810, 43, pl. 17, fig. 6.

Vireo solitarius VIEILL. 1817.—AUD. Orn. Biog. i, 1831, 147, pl. 28; Synop. 1839, 160; B. Am. iv, 1842, 144, pl. 239.—NUTT. Man. i, 1832, 305.—BAIRD, B. N. Am. 1858, 340; Cat. N. Am. B. 1859, No. 250.—COUES. Key, 1872, 121; Check List, 1873, No. 127; 2d ed. 1882, No. 177; B. N. W. 1874, 99; B. Col. Val. 1878, 507.

Vireosylvia solitaria BAIRD, Review, 1866, 347 (s. g. *Lanivireo*).

Lanivireo solitarius ALLEN, 1869.—B. B. & R. Hist. N. Am. B. i, 1874, 373, pl. 17, fig. 8.—RIDGW. Nom. N. Am. B. No. 141.

HAB. Eastern North America, north to "Fur Countries;" breeding from northern border of United States northward, and wintering in Cuba, eastern Mexico, and Guatemala.

"**SP. CHAR.** (No. 300 male.) Above olive-green, including upper tail-coverts; the top and sides of head and nape ashy plumbeous; sides of the neck plumbeous olive. Broad line from nostrils to and around eye, involving the whole lower eyelid, white. A loreal line involving the edge of the eyelid, and a space beneath the eye, dusky plumbeous. Beneath white; the sides yellow, overlaid with olive, this color not extending anterior to the breast. Axillars and base of crissum pale sulphur-yellow, the long feathers of the latter much paler or nearly white. Wings with two bands and outer edges of innermost secondaries olivaceous white; the quills dark brown, edged externally with olive-green, internally with white; tail-feathers similarly marked, except that the lateral feather is edged externally also with white, the central without internal border. Bill and legs blackish plumbeous. Iris brown.

"First quill spurious, rather more than one fifth the second, which is intermediate between the fifth and sixth; third longest.

"Fresh specimen: Total length, 5.40; expanse of wing, 9.00 Prepared specimen: Total length, 5.25; wing, 2.95; tail, 2.35.

"Spring specimens show sometimes a gloss of plumbeous on the back, obscuring the olive, the contrast of colors being greater in the autumnal and young birds. Sometimes the crissum appears nearly white. The length of the spurious primary varies considerably, from .45 to .75 of an inch.

"In autumn the colors are similar, but slightly duller and less sharply defined, while the back is considerably tinged with ashy." (*Hist. N. Am. B.*)

The solitary Vireo passes through Illinois only during its spring and fall migrations; at least there seems to be no record of its breeding anywhere in the State, but it may do so in the extreme northern portion. Its known range during the nesting season extends from eastern Massachusetts and the region along the northern border of the Great Lakes northward nearly to the limit of tree growth.

"Mr. Burroughs describes the love-notes of these birds as being inexpressibly sweet and tender in both sexes. The song of the male,

as I have heard it, bears no resemblance to that of any other Vireo. It is a prolonged and very peculiar ditty, repeated at frequent intervals and always identical. It begins with a lively and pleasant warble, of a gradually ascending scale, which at a certain pitch suddenly breaks down into a falsetto note. The song then rises again in a single high note, and ceases.

"Mr. Nuttall found a nest of this species suspended from the forked twig of a wild crab-tree, about ten feet from the ground. The chief materials were dead and withered grasses, with some cob-webs agglutinated together, externally partially covered with a few shreds of hypnum, assimilating it to the branch on which it hung, intermingled with a few white paper-like capsules of the spiders' nests, and lined with a few blades of grass and slender root-fibres." (BREWER.)

SUBGENUS *Vireo* VIEILL.

Vireo VIEILL. Ois. Am. Sept. 1, 1807, 68. Type, *Mniotilta noveboracensis* Gmel.

"SUBGEN. CHAR. Wings short and rounded, a little longer than the tail, equal to it, or shorter. First primary distinct and large, from two fifths to half or more the length of the second, shorter or not longer than the eighth." (*Hist. N. Am. B.*)

The two species of this subgenus which are known to occur in Illinois may be distinguished by the following characters:

- 1 *V. noveboracensis*. Two distinct white bands on wing. Lores dusky, bordered above by a yellow streak; a yellow orbital ring. Above olive-green, the nape is dusky. Under parts white, throat greenish yellow. Feet white or dusky.

"SP. CHAR. (No. 10, 193 male, Illinois.) First primary about half the length of second, which is longer than secondaries, and about equal to the eighth; the fourth longest; third and fifth little shorter.

"Above bright olive-green; sides of neck, and a gloss on its upper surface ashy. The middle concealed portion of feathers of lower back and rump pale sulphur-yellowish. Beneath white; the chin and lower cheeks with a greyish tinge; the sides of breast and body, with axillars and base of crissum (more faintly), bright yellow; the inner wing-coverts and rest of crissum much paler, almost white. A broad yellow line from nostrils to and continuous with a yellow ring round the eye, which is encircled exteriorly by olivaceous; a dusky loreal, but no postocular spot. Wings with two covert-bands and innermost secondaries externally, broadly yellowish white; rest of quills edged externally with olive, except the two outer and tips of other primaries, which are grayish. Rectrices edged externally with olive, except outermost, which is bordered by grayish. All the long quills bordered internally by whitish. Bill blue-black, paler on the edges; legs dark plumbeous. Iris white. Total length, 4.90; wing, 2.40; tail, 2.20.

"Specimens vary slightly in a greater amount of ashy on the head, and less brilliancy of the yellow of head and sides. Sometimes there is a decided ashy shade in the white of throat and jugulum, which again has a very faint tinge of yellowish." (*Hist. N. Am. B.*)

The White-eyed Vireo—popularly known usually as the "Little Green Hanging-bird," or "Chickty-beaver," is an abundant species in suitable localities, which comprise hazel thickets, blackberry patches, bushy swamps, etc., where its presence is made known by its vociferous notes, which in loudness appear out of all proportion to the size of the little creature which produces them. These notes are remarkable for their oddity as well as for their strength. In Bermuda they are interpreted as "*ginger-beer,—quick,*" while in Illinois the writer has heard them translated by boys into "*chick'ty-beaver,—lim'ber, stick,* with special emphasis on the first syllable of each word.

The White-eyed Vireo is an exceedingly unsuspecting bird, "permitting a near approach, and when whistled to will often stop and eye you with marked curiosity, and even approach a little nearer, as if to obtain a better view, entirely unconscious of any danger. This is not so, however, when they have a nest. On this occasion they exhibit great uneasiness when their nest is visited, approaching very near to the intruder, looking down upon him with marked expressions of uneasiness, and scolding all the while with great earnestness, and with a hoarse mewling that is very peculiar." (BREWER.)

The nests of this species are elegant specimens of bird architecture. They are deeply pensile, composed of soft mosses, lichens, and other substances, and suspended from the forks of a twig, usually at a height

of three to five feet from the ground. A characteristic one described by Dr. Brewer was "composed of a singular medley of various materials, among which may be noticed broken fragments of dry leaves, bits of decayed wood and bark, coarse blades of grass, various vegetable fibres, lichens, fragments of insects, mosses, straws, stems, etc. These are all wrapped round and firmly bound together with strong hempen fibres of vegetables. Within this outer envelope in an inner nest, made of the finer stems of grasses and dry needles of the white pine, firmly interwoven." The height and diameter were each about three inches, and the cavity about two inches deep.

Vireo bellii (Aud.)

BELL'S VIREO.

Popular synonym. Bell's Greenlet.

Vireo bellii AUD. B. Am. vii, 1844, 533, pl. 435.—BAIRD, B. N. Am. 1866, 337; Cat. N. Am. B. 1859, No. 246; Review, 1866, 358.—COOPER, Key, 1872, 139; Check List 1873, No. 151; 2d ed. 1882, No. 183; B. N. W. 1874, 101; B. Col. Val. 1878, 323.—B. B. & B. Hist. N. Am. B. i, 1874, 339, pl. 17, fig. 13.—RIDGWAY, Nom. N. Am. B. 1881, No. 145.

HAB. Great Plains of the United States, north to Minnesota, east to Illinois (prairie districts), south (in winter) to southern Mexico (Tehuantepec). Arizona, in autumn.

SP. CHAR. (No. 1,926.) Above olive-green, brightest on the rump; tinged anteriorly with ashy; the top and sides of head ashy, in faint contrast. A line from nostrils to eye (scarcely beyond it), and eyelids very pale yellowish white; lores dusky. Under parts, including inner wing-coverts, and edge of wing, creamy white; the sides, axillars, and crissum pale yellow, sides of lower neck and of breast glossed with olivaceous, faintest on the longer feathers of the latter. Two rather narrow bands on the wing-coverts, and the outer edges of innermost secondaries white; the other quills edged with faded olivaceous. Inner edges of quills whitish. Tail feathers brown edged externally with olive;

In its habits this species is nearly a counterpart of the White-eyed Vireo, inhabiting, like that species, dense thickets or briery patches. In Illinois it is confined to the prairie districts, and is almost everywhere a much less common bird than *V. noveboracensis*. The writer first met with it on Fox Prairie, in Richland county, on the 8th of June, 1871, being first apprised of its presence by its very curious notes. Mr. Nelson found it in the same locality four years later, but in 1888 the writer was unable to discover any of the species during several weeks' search in the same place and adjacent localities, all the thickets which it formerly inhabited having given way to cultivated fields. Mr. Nelson's experience coincided in the main with that of the writer, except that he found the species so shy that only two were shot, while the writer had no difficulty in shooting several, but was unable to find or secure them, owing to the tangled briery growth in which they fell. Mr. Nelson says:*

"Rather common in the dense patches of bushes on the prairie. The males would appear on the top of a tall bush and utter a queer song entirely peculiar, but so shy were they that at the first alarm they would disappear. Although repeated efforts were made to obtain specimens during the week we were there, only two were shot."

He subsequently (June 23, 1875) obtained a single specimen near Chicago. (See *Bull. Essex Inst.* Vol. VIII., 1876, p. 103.)

* Bull. Essex Inst. ix. 1877, p. 48.

FAMILY LANIIDÆ.—THE SHRIKES.

"**CHAR.** Bill very powerful, strong, and much compressed, the tip abruptly hooked, deeply notched, and with a prominent tooth behind the notch; both mandibles distinctly notched, the upper with a distinct tooth behind the lower with the point bent up. Tarsi longer than the middle toe, strongly scutellate. Primaries ten; first primary half the second, or shorter (occasionally wanting). Wings short, rounded; tail long and much graduated. Sides of tarsi with the plates divided on the outside," (*Hist. N. Am. B.*)

Of this family only a single genus is known in North America.

GENUS LANIUS LINNÆUS.

Lanius LINN. S. N. ed. 10, i, 1763, 83. Type *L. collurio* LINN.

"**GEN. CHAR.** Feathers of forehead stiffened; base of bill, including nostrils, covered by bristly feathers directed forward. Bill shorter than the head, much compressed, and very powerful. Culmen decurved from base, the mandible abruptly bent down in a powerful hook with an acute lobe near the tip. Tip of lower mandible bent upwards in a hook; the gonys very convex. Bristus with long bristles. Legs stout; the tarsi rather short, and longer than the middle toe; the lateral equal; the claws all very sharp and much curved. Wings rounded; the first primary about half the second, which is equal to the sixth or seventh. Tail longer than the wings, much graduated, the feathers broad" (*Hist. N. Am. B.*)

Lanius borealis Vieill.**NORTHERN SHRIKE.**

Popular synonyms. Great American Shrike; Great Northern Shrike or Butcher Bird; White Whiskey-jack (Fur Countries).

Lanius borealis VIEILL. Ols. Am. Sept. 1, 1807, 90 pl. 50.—Sw. & RICH. F. B. A. ii, 1831, 111, pl. 33.—AUD. Synop. 1839, 157; B. Am. iv, 1842, 130 pl. 236.—RIDGW. Nom. N. Am. B. 1831, No. 148.—COUES, 2d Check List, 1882, No. 186; B. Col. Val. 1878, 558.

Collyrio borealis BAIRD, B. N. Am. 1853, 324; Cat. N. Am. B. 1859, No. 236.

Collurio borealis BAIRD, Review, 1866, 440.—COUES, Key, 1872, 125; Check List, 1873, No. 134; B. N. W. 1874, 101.—B. B. & R. Hist. N. Am. B. i, 1874, 415, pl. 19, figs. 1, 2.

HAB. Northern North America, south, in winter, to about 35°; breeding north of the United States, and in higher mountain districts of the latter.

SP. CHAR. *Adult in breeding season.* Above light ash-gray, becoming gradually white on forehead, over eyes, on tips of longer scapulars, and on upper tail-coverts, the latter, however, tinged with gray. Lores and auriculars black. Wings black, the secondaries and shorter primaries narrowly tipped with grayish white, the primaries with a white patch at the base. Lower parts grayish white, the jugulum, breast, and sides transversely waved or vermiculated with dusky gray. Tail black, the outer web of lateral feather and ends of all except middle pair white. Bill entirely black; feet black; iris brown. *Adult in winter.* Similar, but lores grayish white, and mandible whitish at base. *Young.* Above grayish brown, tinged, more or less with rusty, the longer scapulars and upper tail-coverts paler; black of lores and auriculars indistinct or obsolete; wing-coverts edged and tipped with rusty or buff; spot at base of primaries much restricted, or obsolete. Lower parts brownish white, everywhere distinctly vermiculated with dusky.

Total length, about 10½ inches, extent 14½. Wing about 4.50.

Although it has been recorded as breeding in the northern portion of Illinois, there can now be no doubt that all such records refer to the Loggerhead (*L. ludovicianus*), and not to the present species, which is probably only a winter visitor, and a rare one at that, beyond the middle portion of the State. The summer habitat of the Great Northern Shrike, as may be inferred from its name, includes the more northern portions of the continent, as far north as the limits of tree growth, and across from ocean to ocean. It is said also to breed in mountainous regions of the United States, but we have little reliable information on this point.

The general habits of this species partake of those of others of its family. "Its bold audacity and perseverance are quite remarkable, and are often displayed, in the fall, in the manner in which it will enter an apartment through an open window and attack a Canary, even in the presence of members of the family. It rarely fails, if it gains access to the cage, to destroy its inmates before the latter can be rescued by the intervention of those present, and only by great promptness in sheltering the cage. In one instance the writer was sitting at a closed window, reading, with a Canary hanging above him. Suddenly there was a severe blow struck at

the pane of glass near the cage, and the frightened Canary uttered cries of alarm, and fell to the bottom of its cage. The cause was soon explained. A Shrike had dashed upon the bird, unconscious of the intervening glass, and was stretched upon the snow under the window, stunned by the blow. He revived when taken up, and lived several days, was sullen, but tame, and utterly devoid of fear. He refused raw meat, but eagerly tore in pieces and devoured small birds when given to him. His tameness and indifference to our presence may have been occasioned by stupor arising from his injury. In another case a Shrike made a similar attack, but escaped unharmed, and though he remained about the house several days, was too wary to allow himself to be decoyed within gunshot." (Brewer.)

***Lanius ludovicianus* (Linn.)**

LOGGERHEAD SHRIKE.

Popular synonyma. Louisiana Shrike; Carolina Shrike; Southern Butcher Bird; "Mocking Bird;" Common American Shrike.

a. *ludovicianus*.

Lanius ludovicianus LINN. S. N. ed. 12, i, 1766, 134.—AUD. Orn. Biog. i, 1831 300, pl. 57; B.

Am. iv, 1842, 136, pl. 237.—COUES, B. Col. Vol. 1873, 561; 2d Check List, 1882, No. 187.

—RIDGW. NOM. N. Am. B. 1881, No. 149.

Collyrio ludovicianus BAIRD, B. N. Am. 1868, 325; Cat. N. Am. B. 1869, No. 237.

Collurio ludovicianus BAIRD, Review, 1866, 443.—B. B. & R. Hist. N. Am. B. i, 1874, 418, pl. 19, fig. 4.—COUES, B. N. W. 1874, 233.

Lanius carolinensis WILS. Am. Orn. iii, 1811, 57, pl. 23 fig. 5.

b. *excubitorides*.—White-rumped Shrike.

dusky, and tinged, more or less, with buff. Middle and greater wing-coverts, tipped with grayish buff, enclosing a curved dusky line; secondaries tipped with pale buff. Breast and sides pale buff or light grayish, vermiculated with dusky grayish. Black on side of head replaced by grayish dusky, with less sharply defined outlines.

Total length, about 9 inches; extent, 12.50; wing, about 3.75-4.10; tail, about 4.00.

Although the so-called "White-rumped Shrike" has usually been recognized as a well-marked race, it is found, when very large series of specimens are carefully compared, to rest upon a rather unstable basis. The ascribed characters are good enough if they were constant, which they are not; and about all that we can at present admit is a decided *tendency* in specimens from the arid interior regions to be lighter in color than those from the more humid districts on either side. The opposite extreme is seen in specimens from Florida, which are very dark, but probably hardly separable as a race.

Specimens of this species from Illinois have been referred to *excubitorides*; but, while some specimens approach the latter, none that I have seen are typical of that style. Regarding this matter, Mr. Nelson makes the following observations in his catalogue of the birds of the northeastern portion of the State (*Bull. Essex Inst.* Vol. VIII., 1876, p. 104):

"A small series of shrikes from the northern and southern extremes of the State have been submitted to my friend, Mr. J. A. Allen, who replies as follows: 'They all belong decidedly to var. *ludovicianus*, though somewhat lighter than Florida specimens, with smaller bills, etc. There is a slight approach in some of them to *excubitorides*, but the resemblance to Florida specimens is far greater than to specimens from the West—Wyoming, Utah, Colorado, etc. During the past two years I have examined a large number of shrikes from northern Illinois, and have found them, in nearly all cases, to be much nearer *ludovicianus* than *excubitorides*.* Specimens obtained in the Wabash Valley and other parts of southern Illinois, exhibit the same characteristics in about equal proportion, as far as the number of specimens seen would permit me to judge."

In all portions of the State of Illinois that are not too thickly wooded, the Loggerhead Shrike is a more or less common species. It is partial to those more open localities where there are hedge-rows or plenty of low thorny trees, preferably the honey-locust (*Gleditsia triacanthos*), wild crab-apple, or trees of like character.

* An example collected at Mt. Carmel, January 5, 1886, by Master Jesse J. Turner, and by him presented to the National Museum, is decidedly the darkest in color of any of the numerous specimens in the National collection, including those from Florida.

These seem indispensable to its presence for the reason that the slender, sharp-pointed thorns are required for impaling its prey, and the matted impenetrable covert for the concealment or protection of its nests.

Notwithstanding the fact that this species occasionally kills and devours small birds, it is of great benefit to the farmer from the fact that it destroys large numbers of grasshoppers and field mice. The habit of impaling its victims on thorns is one common to the whole family of Shrikes, and also one that has not been satisfactorily explained; for it seems that objects so impaled are seldom touched by the bird afterward. It has been suggested that the bird improves every opportunity to procure food, and when not needing it impales it to provide for an emergency; and that when fresh food is readily obtainable it is preferred. This may be the true explanation, but we think a more plausible one may be found.

In the protection of its young, no bird displays greater courage or more affectionate solicitude for its offspring. I have repeatedly, when I had climbed to a nest containing young, had the parent birds alight within my reach and retreat only when I had attempted to grasp them; all the while they were greatly excited with anger, and were the opportunity given to do so without being seen would actually bite my hand. During such occasions they keep up a peculiar crackling sound, mingled with a sonorous *qua a-a, qua a-a*.

The notes of this species are exceedingly varied; so much so, in fact, that it is confounded by many people with the Mockingbird, although this is perhaps as much on account of the general simi-



perch it sinks nearly to the ground, describing a curve as it descends and passing but a few feet above the surface, ascends in the same manner to the object on which it next alights. The flight is performed in an undulating manner, the bird sustaining itself a short time by a rapid fluttering of the wings, and sinking as this motion is temporarily suspended. While flying, the white patch on the wing is very conspicuous.

The very bulky nests of this species are usually placed in thorny trees or in those having a dense canopy of vines. At Mount Carmel, however, I have frequently found them in apple trees. They are composed largely of wool and feathers. When built in young trees of the honey locust, where it is an absolute impossibility to reach them by climbing, they are often poked from their position out of spite, by the "small boy" with poles or fence-rails.

FAMILY AMPELIDÆ.—THE WATWINGS.

CHAR. Legs moderate. Nostrils elongated, linear, with the frontal feathers extending close to the edge and to anterior extremity, concealing them; these feathers short, velvety and erect, with few bristles. Wings very long and pointed; outer or first primary so much reduced as to be almost inappreciable; the second nearly the longest. Wing nearly twice the length of the short, narrow, even tail. Under coverts of tail reaching almost to its tip. Secondary quills of fully adult birds with flat horny appendages at end of shaft like red sealing-wax, except in *A. japonica*. Young birds streaked beneath. Adults plain.

This family, as restricted, contains but a single genus, *Ampelis*.

The most obvious characters consist in the short, broad, and rather depressed bill, with short, decidedly convex gonys and densely feathered nasal fossæ, and the wax-like appendages to the tips of the secondary quills in the adult.

The family is usually enlarged, however, to include a so-called subfamily, *Ptilogonatinæ*, which may be distinguished as follows:

COMMON CHARACTERS. Gape of mouth nearly straight. Metatarsal scutellæ in three series. Body plain beneath, in adults.

Ampelina. Wings very long and much pointed, longer than the short even tail. First primary excessively rudimentary; the outermost about the longest. Gape without bristles. Frontal feathers extending forward beyond the nostrils. Often with horny appendages to the tips of the secondary quills.

of subdued but harmoniously blended and contrasted colors, and are besides of most graceful form. They may be distinguished as follows:

COMMON CHARACTERS. A lengthened crest of soft blended feathers. Colors, soft silky-brownish becoming more vinaceous anteriorly, and ashy posteriorly above. A black stripe on side of head, from nasal feathers across lores through the eye and behind it beneath crest, and a patch of the same on chin, with a white streak between on side of lower jaw.

A. Wing variegated. Lower tail-coverts rufous. Crest much developed. Forehead and side of head bright purplish rufous. Black patch covering whole throat, and sharply defined. No white line between black of lores, etc., and brown of forehead. Inner webs of primaries tipped narrowly with white.

a. Terminal band of tail rose-red.

A. japonica.* Greater wing-coverts dull red. No yellow on tips of primaries. Rufous of crissum stained with red. *Hab.* Japan and eastern Siberia.

b. Terminal band of tail rich yellow.

A. garrulus. Secondaries and primary coverts tipped with white, forming two broad short bands. Primaries with outer webs often tipped with yellow. *Hab.* Arctic regions of both hemispheres; in winter, south into northern United States and along Rocky Mountains as far as Fort Massachusetts, New Mexico.

B. Wings unvariegated. Lower tail-coverts white. Crest moderately developed. Forehead, etc., not different from crest. Chin, only, black, this fading gradually into the brown of throat. A white line between black of lores, etc., and brown of forehead.

a. Terminal band of tail rich yellow.

A. cedrorum. Wings plain bluish-ashy. *Hab.* Whole of North America, from 52° N., south to Guatemala, Jamaica and Cuba in winter.

***Ampelis garrulus* Linn.**

BOHEMIAN WAXWING.

Popular synonyms. Northern Chatterer or Waxwing; European Chatterer or Waxwing; Black-throated Waxwing; Waxen Chatterer.

Lanius garrulus LINN. S. N. ed. 10, 1, 1758, 95.

Ampelis garrulus LINN. S. N. ed. 12, 1, 1766, 297.—BAIRD, B. N. Am. 1858, 907, 923; Cat. N. Am. B. 1859, No. 232; Review. 1866, 405.—COUES, Key, 1872, 115; Check List, 1873, No. 118; 2d ed. 1882, No. 166; B. N. W. 1874, 91; B. Col. Val. 1878, 459.—B. B. & R. Hist. N. Am. B. 1, 1874, 396, pl. 18, fig. 1.—RIDGW. Nom. N. Am. B. 1881, No. 150.

Bombycilla garrula VIEILL. 1823.—SW. & RICH. F. B. A. ii, 1831, 237.—NUTT. Man. ii, 1834, 579.—AUD. Orn. Biog. iv, 1838, 462, pl. 363; Synop. 1839, 165; B. Am. iv, 1842, 1865, pl. 245.

HAB. Northern parts of Northern Hemisphere; in North America, breeding in the northern coniferous forests, south to northern border of the United States, in Rocky Mountains; in winter, south, more or less regularly to lat. 40°, irregularly, still farther south. Not recorded from Pacific coast south of Alaska.

"SP. CHAR. Crest lengthened. Body generally soft, silky brownish-ashy, with a purplish cast, the wing-coverts and scapulars more brownish, becoming more reddish anteriorly and ashy posteriorly; the rump and upper tail-covert, as well as the secondaries, being nearly pure ash. Anteriorly the color passes gradually into deep vinaceous chestnut on the forehead to behind the eye and on the cheeks; abdomen yellowish white. Lower tail-coverts deep chestnut. A stripe on side of the head, covering the lores and nasal feathers (scarcely meeting across the forehead), involving the eye and continued back toward the occiput and beneath the crest, with a large patch covering the chin and throat, deep black; a narrow crescent on lower eyelid, and a short stripe between the black of the throat and that of the chin at the base of the lower mandible, two very broad bars on

**Ampelis phænicopterum* TEMM. Pl. Col. ii, 1838, pl. 450.

the wing, one across ends of primary coverts, and the other across ends of secondaries (the first occupying both webs, and the latter the outer), white. Primary coverts, primaries, and tail slaty black, the latter growing gradually ashy basally. A broad band across end of tail, and a longitudinal space along end of outer web of primaries, gamboge-yellow, the marks on primaries, however, sometimes white only stained with yellow. Each of the secondaries with an expanded continuation of the shaft, in form of flattened, very thin, somewhat elliptical appendages, of a bright vermillion-red resembling red sealing-wax. Length, 7.40; wing, 4.30; tail, 3.00." (*Ibid.*, N. Am. B.)

The sexes are essentially alike in coloration, but younger birds have little or no yellow on the wing, the markings being entirely white, or yellowish white, and reduced in size; the yellow tip to the tail is also narrower, and the "sealing-wax" appendages more or less rudimentary, or even wanting altogether.

This exquisite bird is an abundant though very irregular winter visitor to the extreme northern portion of the State, and even occasionally wanders to the southern portion, Professor Forbes having taken a specimen at Villa Ridge, Pulaski county, December 18, 1879. (See *Bull. Nutt. Orn. Club*, Vol. V., p. 118.)

In Cook county, Mr. Nelson says* that it is "an irregular but occasionally abundant winter resident, especially along the lake. Arrives in December, and sometimes remains until April. The winter of 1875-76 they were unusually numerous. In a letter dated March 16, 1876, Mr. Charles Douglas, of Waukegan, describes an "immense" flock of these birds which he observed the day previous, upon the lake shore near that town. The birds were feeding upon the juniper berries found there, and covered, according to Mr. Douglas's estimation, an area at least ten rods square. While feeding, those in the rear were continually flying and alighting in ad-

HAB. Whole of temperate North America, south (in winter only?) to Guatemala, Jamaica, and Cuba; breeds nearly throughout its summer range.

SP. CHAR. Crest moderate. General color soft vinaceous cinnamon, deepest anteriorly, more olivaceous on back, scapulars, and wing-coverts, passing into pure light ash on the rump and upper tail-coverts, and into dingy yellow on flanks and abdomen. Lower tail-coverts white. Whole of the wing posterior to the greater coverts slaty ash, almost black along end of inner webs of primaries, the outer webs of which are narrowly edged with hoary whitish. Tail slate, passing into black terminally, tipped with a broad, sharply defined band of gamboge-yellow. A broad stripe of intense velvety-black on side of head starting from nostril, passing across lores, and involving the eye, continued from it beneath the crest to the occiput; chin dull black, blending gradually into the brownish of the throat. A narrow white line across the forehead and along the side of crown, between brown of crown and back lores, etc., a narrow crescent on lower eyelid, and a stripe between black of lores and that of the throat, white. Fully adult male and female with each secondary quill terminated by a bright red horny appendage to the shaft. Younger birds with these very small and few in number, or entirely absent. *Young.* In general appearance similar to the adult. Colors more grayish, with indistinct concealed whitish streaks on nape and down back, these stripes becoming very conspicuous on the sides and flanks and across breast. No black on chin. Rump grayish brown; abdomen and flanks dingy whitish. No appendages to secondaries, and the yellow band across end of tail narrower than in adult.

Regarding alleged sexual differences of plumage in this species, we quote the following from E. A. Mearns, in the "Nuttall Bulletin" for April, 1878, p. 70: "I have been so struck by the great variation in different specimens of this species, in regard to the red wax-like appendages, that I have taken particular pains to procure a large series of specimens illustrating this difference. In this series I can scarcely detect any sexual difference in that respect, except that the particularly well-developed specimens are all males. In the normal plumage the waxen appendages are confined to the tips of the secondary remiges, but in my cabinet are several specimens which have them affixed to the *primaries*, and in several instances even to the *rectrices*; but they are usually small and few in number. One specimen has several of these attachments to the *primaries*, which are nearly as well developed as those on the secondaries. But the most remarkable specimen is a handsome male (No. 545, adult male, April 11, 1875, Highland Falls, N. Y., E. A. M.), having these ornaments attached, not only to each of the secondaries and *three of the primaries*, but each of the *rectrices* is embellished by a well-developed red appendage. Several other specimens have large red tips to each of the *rectrices*; and one (No. 1,558, male, February 23, 1878, E. A. M.) has *five* of its primary remiges (5th to 9th) tipped with yellow. Professor Baird* says: "A specimen from

* Baird, Brewer, and Ridgway, Birds N. Am. i, p. 401, 1874.

Guatemala (No. 50,455, male) is almost identical with examples from the United States, but differs in having a small spot of yellow at the tip of each primary; also there are red appendages on the tip of a few tail-feathers, as well as the *longest feathers of the lower tail-coverts*."*

"While speaking of this species, it may be well to add that in specimens taken in worn plumage, late in summer, the colors are very much bleached, all of the colors being very much paler; the white band across the forehead is very much broadened, and the black of the chin much lightened. The top of the head and neck has an ochraceous suffusion, and the cinnamon-color of the back extends into, and partially subdues the ash of the rump."

The elegant Cedar Waxwing is an abundant species throughout the State, but it is so capricious in its movements that its presence or absence appears to bear no relation to season or weather, the question of food supply being probably the controlling influence in its wanderings. Wherever there are ripe cherries (wild or cultivated), cedar berries, or berries of the black gum (*Nyssa multiflora*) it is sure to be present. Except during the breeding season they rove in flocks, uttering, both while on the wing and when feeding, a very simple and perfectly monotonous lisping note, which is apparently their only utterance; for, although belonging to the *Oscines*, or so-called "Singing Birds," this species is perhaps the most silent of all the Passeres.

During the spring of 1881, when the willow trees in a swamp near Wheatland, Indiana, were infested with myriads of the larvæ



FAMILY HIRUNDINIDÆ.—THE SWALLOWS.

"CHAR. Bill short, triangular, very broad at base (nearly as wide as long) and much depressed, narrowing rapidly to a compressed, notched tip; mouth opening nearly to the eyes. Primaries nine, graduating rapidly less from the exterior one; tail feathers twelve. Feet weak; tarsi scutellate, shorter than middle toe and claw. Number of joints in toes normal; basal joints of middle toe partially or entirely adherent to lateral toes. Wings long, falcate. Tail forked. Eyes small. Plumage compact, usually lustrous. All the American species with a white patch on the sides under the wing, and with the irides hazel or brown." (*Hist. N. Am. Birds.*)

The *Hirundinidæ* form a very well-marked group of birds, easily distinguished from all others except the *Cypselidæ* (Swifts), to which they exhibit a close resemblance in external appearance and habits, but from which, apart from the internal structure, they differ radically in the possession of nine, instead of ten primaries; twelve, instead of ten tail-feathers; scutellate tarsi, toes with normal number of joints (1, 2, 3, and 4, respectively, exclusive of ungual phalanges), instead of a different proportion; differently shaped nostrils, and other minor characters.

The following synopsis, adapted from that in *Hist. N. Am. B.* (Vol. I., pp. 326, 327), may serve to identify the North American genera.

Genera of North American Hirundinidæ.

A. Nostrils broadly oval, or circular; opening upwards and forward, and exposed; without overhanging membrane.

a. Edge of wing smooth. Tarsus short, stout; equal to middle toe without claw; feathered on the inner side above. Nostrils almost or entirely without membrane.

Bill stout; culmen and commissure much curved. Frontal feathers without bristles. Tail deeply forked. Color lustrous black; belly and crissum sometimes white. **Fregata.**

Bill rather weaker; commissure and culmen nearly straight to near tip. Frontal feathers bristly. Tail nearly even. Throat, rump, and crissum, and usually forehead, rufous; belly white. **Petrochelidon.**

b. Edge of wing in adult male armed with stiff recurved hooks. Bill larger and more depressed. Tail emarginate only. Color uniform dull brown, the crissum white. **Stelgidopteryx.**

B. Nostrils lateral; bordered behind and inside, or overhung by membrane, the outer edge of which is straight, and directed either parallel with axis of bill or diverging from it.

a. Tarsus short; about equal to middle toe without claw. Tibial joint feathered; feathers extending along inside of upper end of tarsus.

Tarsus bare at lower end. Lateral claws reaching only to base of middle.

Tail very deeply forked, much longer than closed wings; lateral feathers linear and very narrow at end, twice the length of central. Upper parts

and pectoral collar steel-blue; front and throat, sometimes under parts, rufous. Tail-feathers with white spots on inner webs *Chelidon*.
 Tail with shallow fork, not exceeding half an inch shorter than closed wings. Feathers broad. Color blue or green above, with or without white rump; white beneath. Tail-feathers without spots *Tachycineta*.
 Tarsus with a tuft of feathers at lower end. Lateral claws lengthened reaching beyond base of middle claw.
 Tail slightly forked. Color dull brown above; beneath white, with brown pectoral collar *Clivicola*.

GENUS PROGNE BOIE.

Progne BOIE, *Isla*, 1836, 971. Type, *Hirundo purpurea* LINN.—*H. subis* LINN.

"Gen. CHAR. Body stout. Bill robust, lengthened; lower or commissural edge of maxilla sinuated, decidedly convex for basal half, then as concave to the tip, the lower mandible falling within its chord. Nostrils superior, broadly open, and nearly circular, without any adjacent membrane, the edges rounded. Legs stout. Tarsus equal to middle toe without claw; the joint feathered; lateral toes about equal; the basal joint of the middle toe half free internally, rather less so externally. Claws strong, much curved. Nest in hollow trees. Eggs white.

"The species of this genus are the most powerful and robust of the Swallows. Some are glossy black, others whitish below." (*Hist. N. Am. B.*)

Progne subis (Linn.)

PURPLE MARTIN.

Popular synonyms. Martin; House Martin; Purple Swallow; American Martin; Violet Swallow.

Hirundo subis LINN. 8. N. ed. 12. l. 1758. 192.



No bird of North America is more deserving of protection and of encouragement to live about the habitations of man than the Purple Martin. One pair of them will destroy more insects in a season than all the English Sparrows in a township will kill in their lifetime. Besides, their notes are pleasing to the ear, and their actions both when on the wing and when perching upon their boxes extremely interesting.

The ordinary notes themselves of this species are very agreeable to say the least, and during the breeding season the male has a continued and varied song of great beauty and considerable power; and it is as much on account of the sweetness of their notes as for their familiarity and usefulness that these birds are such general favorites. I have observed that in the wild woods, where these handsome birds have not yet had opportunity to avail themselves of man's hospitality, they are as lovely and musical as when semi-domesticated in our door-yards, and in all respects exactly the same birds.

GENUS PETROCHELIDON CABANIS.

Petrochelidon CAB. Mus. Hein. 1850. 47. Type, *Hirundo melanogaster* SWAINSON, — *P. swainsoni* SOL.

"GEN. CHAR. Bill stout and deep, somewhat as in *Fregata*. Nostrils entirely superior open, without overhanging membrane on the inner (or upper) side, but somewhat overhung by short bristles, seen also along base of inner mandible and on chin. Legs stout; the tarsi short, not exceeding the middle toe exclusive of its claw; feathered all around for basal third or fourth, though no feathers are inserted on the posterior face. Tail falling short of the closed wings, nearly square or slightly emarginate; the lateral feathers broad to near the ends, and not attenuated." (*Hist. N. Am. B.*)

This genus, like *Chelidon*, is nearly cosmopolitan, at least two species—*P. arborea* (GOULD) and *P. ariel* (GOULD)—belonging to Australia, and two or more to tropical America.

Petrochelidon lunifrons (Say).

CLIFF SWALLOW.

Popular synonyms. Eave, or Square-tailed Eave, Swallow; Crescent Swallow; White-fronted Swallow; Republican Swallow.

Hirundo lunifrons SAY, Long's Exp. II, 1823, 47.—SW. & RICH. F. B. A. II, 1831, 331.—BAIRD, B. N. Am. 1858, 309; Cat. N. Am. B. 1859 No. 226.

Petrochelidon lunifrons LAWE. 1851.—BAIRD, Review, 1865, 238.—COUES, Key, 1872, 114; Check List, 1873, No. 114; 2d ed. 1882, No. 162; B. N. W. 1874, 88; B. Col. Val. 1878, 426, (excl. syn. pt.).—B. B. & R. Hist. N. Am. B. I, 1874, 384, pl. 16, fig. 13.—RIDGW. Nom. N. Am. B. 1881, No. 153.

Hirundo fulva "VIEILL." AUD. Orn. Biog. 1, 1894, 393, pl. 55 (see *VIEILL.*); B. Am. 1, 1846, 177, pl. 47.—NUTT. Man. 1, 1832, 603.

HAB. Whole of temperate North America, north to Nova Scotia, Severn R., and Alaska; winters in portions of Central and South America.

"SP. (HAB. (No. 18,322, male.) Top of head glossy black, with greenish lustre; 'back' and scapulars similar, but rather duller, and somewhat streaked by the appearance of the white sides of the feathers,—the bases of the feathers, however, being plumbeous. Chin throat, and sides of head, chestnut-brown, this extending round on the nape as a distinct continuous collar, which is bounded posteriorly by dull grayish. The chestnut darkest on the chin, with a rich purplish tinge. Rump above and on sides paler chestnut (sometimes fading into whitish). Upper tail-coverts grayish brown, edged with paler, lighter than the plain brown of the wings and tail. Forehead, for the length of the bill, creamy white, somewhat lunate, or extending in an acute angle, a little over the eye; a very narrow blackish frontlet; loreal region dusky to the bill. A patch of glossy black in the lower part of the breast, and a few black feathers in the extreme chin, the latter sometimes scarcely appreciable. Under parts dull white, tinged with reddish gray on the sides and inside of the wings. Feathers of crissum brownish gray, edged with whitish, with a tinge of rufous anteriorly (sometimes almost inappreciable). Nest of mud, lined; built against rocks or beams; opening sometimes circular, on the side; sometimes open above; eggs spotted.

"Total length, 5.10; wing, 4.50; tail, 2.40, nearly even; difference of primary quills, 2.10; length of bill from forehead, .38, from nostril .58, along gape, .60, width, .50; tarsus, .60; middle toe and claw, .73; claw alone, .32; hind toe and claw, .44; claw alone, .30.

"There is no difference between the sexes, but the young bird is very different from the adult in the following particulars: the steel-blue above is replaced by lustreless dusky-brown, the feathers (except on head) being margined with a creamy tint; the neck merely tinged with rufous; the throat has only a dusky suffusion, and the chin is much mixed with white; the frontal patch is obsolete." (*Hist. N. Am. B.*)

The House Swallow, Mud Swallow, or Square tailed Barn Swallow.



GENUS **CHELIDON** FORSTER.

Chelidon FORST. Synop. Cat. Brit. B. 1817, 55. Type, *Hirundo rustica* LINN.

"GEN. CHAR. Nostrils lateral. Tarsi short, not exceeding middle toe without its claw; the upper joint covered with feathers, which extend a short distance along the inner face of tarsus. Tail very deeply forked; the lateral feather much attenuated, twice as long as the middle. Basal joint of middle toe free for terminal fourth on outside, for half on inside. Nest partly of mud, and lined with feathers; eggs spotted.

In type, as in American species, the forehead and throat rufous; a black pectoral collar; tail feathers with large light spots on inner webs." (*Hist. N. Am. B.*)

This, the typical genus of the family, has numerous representatives in the Old World, but in America is represented by a single species, the *H. erythrogaster*, or common Barn Swallow, which inhabits the greater portion of both North and South America. The various species are characterized, in addition to the characters of form detailed above, by a distinctive coloration very different from that of the otherwise closely related genera *Tachycineta* and *Callichelidon*, but much resembling that of the species of *Petrochelidon*, from which, however, other characters trenchantly separate them. The allied American genera may be distinguished from *Chelidon* as follows:

Tarsi slightly feathered on inner face at upper end; equal in length to middle toe without claw.

Tail very deeply forked. Plumage beneath rufous, the throat darker.....*Chelidon*.

Tail slightly forked or emarginate, plumage beneath pure white.....*Tachycineta*.

Tarsi entirely naked, lengthened, equal to middle toe and half its claw.

Tail considerably forked. Plumage beneath pure white.....*Callichelidon**.

***Chelidon erythrogaster* (Bodd.)**

BARN SWALLOW.

Popular synonym. Rufous-bellied Swallow.

Hirundo erythrogaster BODD. Tabl. P. E. 1783, 45 (based on Pl. Enl. 734, fig. 1).—BAIRD, Review, 1865, 295.—COUES, B. Col. Vol. 1873, 497 (*erythrogastra*); RIDGW. Nom. N. Am. B. 1881, No. 154.

Chelidon erythrogastra STEINBEGER, Proc. U. S. Nat. Mus. v, 1882, 31.

Hirundo rufa GMEL. S. N. i, 1788, 1018. NUTT. Man. i, 1832, 601.

Hirundo horreorum BARTON, Frag. Nat. Hist. Penn. 1799, 17.—BAIRD, B. N. Am. 1853, 368; Cat. N. Am. B. 1859, No. 225; Review, 1865, 294.—COUES, Key, 1872, 113; Check List, 1873, No. 111; B. N. W. 1874, 85. B. B. & R. Hist. N. Am. B. i, 1874, 339, pl. 16, fig. 9.

Hirundo erythrogastra horreorum COUES, 2d Check List, 1882, No. 150.

Hirundo rustica "LINN." AUD. Orn. Biog. ii, 1834, 413, pl. 173; Synop. 1839, 35; B. Am. i, 1840, 181, pl. 43, (nec LINN.)

Hirundo americana WILS. AM. Orn. i, 1812, 34, pl. 33, figs. 1, 2.

* *C. cyaneoviridis* BRYANT; BAIRD, Review, 303 (Bahamas).

HAB. Whole of North America (including Greenland and Alaska), and parts of South America; breeds throughout North America, including parts of Mexico; winters in tropical America, including West Indies.

"SP. CHAR. Tail very deeply forked, outer feathers several inches longer than the inner, very narrow towards the end. Above glossy blue, with concealed white in the middle of the back. Throat chestnut; rest of lower part reddish white, not conspicuously different. A steel-blue collar on the upper part of the breast, interrupted in the middle. Tail-feathers with a white spot near the middle, on the inner web. Female with the outer tail-feather not quite so long. Length, 6.00 inches; wing, 5.00; tail, 4.50." (*Hist. N. Am. B.*)

In young birds, the frontal chestnut band is smaller and less distinct. The adult male is more deeply colored beneath than the female.

The common Barn Swallow is so well known that any special account of its habits in this work would be quite superfluous. Its distribution is quite universal, its breeding range including almost the whole continent of North America. In unsettled districts where there are no buildings for its accommodation, it builds in caves or recesses among cliffs. Like all the Swallow tribe, the present species is most beneficial to the farmer, and should be most carefully protected and encouraged.

GENUS *TACHYCINETA* CABANIS.

Tachycineta CAB. MUS. HEIN. 1850 48. Type *Hirundo thalassina* Sw.

"GEN. CHAR. Nostrils lateral, overhung or bordered internally by incumbent membrane. Tarsi with the tibial joint covered by overhanging feathers, adherent a short distance along inner face, about equal to middle toe without claw. Lateral toes equal. Adhesion of basal joint of middle toe variable. Tail emarginate only, or slightly forked; fork not exceeding half an inch in depth. Color blue or green above with or without



Tachycineta bicolor (Vieill.)

WHITE-BELLIED SWALLOW.

Popular synonyms. Black and White Swallow; Green-blue Swallow; Tree Swallow.

Hirundo bicolor VIEILL. Ois. Am. Sept. 1, 1807, 51, pl. 51.—AUD. Orn. Biog. i, 1831, 491, pl. 96; Synop. 1859, 35; B. Am. i, 1840, 175, pl. 46.—NUTT. Man. i, 1832, 605.—BAIRD, B. N. Am. 1858, 310; Cat. N. Am. B. 1859, No. 227; Review, 1865, 297.—B. B. & R. Hist. N. Am. B. i, 1874, 344, pl. 16, fig. 8.

Tachycineta bicolor CABAN. 1850.—COUES, Key, 1872, 113 Check List, 1873, No. 112; B. N. W. 1874, 86; B. Col. Vol. 1878, 418.—BIDGW. Nom. N. Am. B. 1881, No. 155.

Iridoprocne bicolor COUES, 2d Check List, 1882, No. 169.

Hirundo viridis WILS. Am. Orn. v, 1812, 49, pl. 38, fig. 2.

HAB. Whole of temperate North America, breeding from table-lands of Mexico to Alaska and Great Slave Lake; wintering in southern United States, Cuba, Mexico, and Guatemala; Bermudas.

SP. CHAR. Glossy metallic bluish green above; entirely white beneath. *Female* duller in color. Length, 6.25 inches; wing, 5.00; tail, 2.65.

Young bird dull sooty gray above, much like that of *H. thalassina*; but may readily be distinguished by the feathers of the throat being pure white to their roots, instead of having the concealed bases grayish as in that species." (*Hist. N. Am. B.*)

The White-bellied Swallow is an abundant species where there are suitable places for the location of its nests. Some years ago there were many large dead stumps standing in the water in a stagnant pond connected with the Wabash River immediately above the dam at the Grand Rapids, near Mount Carmel. This pond consisted of "back water" resulting from the building of the dam, and the dead stumps were presumably the remnants of trees that had been killed by flooding, since they grew so thickly as to leave no doubt of their having once formed part of the adjacent forest. These dead stumps and "snags" were perforated by countless woodpecker holes, and in these the White-bellied Swallows had their nests, as did also many pairs of Carolina Chickadees and Prothonotary Warblers. The Swallows were most numerous, however, there being perhaps more than fifty pairs nesting there. In some old elm trees, with dead tops, growing on the "commons" at Mount Carmel, there were also, formerly, several pairs nesting.

Regarding this species in Cook county, Mr. Nelson gives us the following information on page 102 of his list:

"Common resident. Arrives in large numbers March 20th. The first of May only residents remain. Departs in September. This species still keeps its primitive habit of nesting in deserted woodpeckers' holes, hollow stumps, and similar places, generally close

to some stream or body of water. Several times during the spring I have seen these birds occupy martin houses for several weeks, until the owners returned, when, after a desperate battle, they would leave. Have never observed them about the town during the breeding season."

GENUS *CLIVICOLA* FORSTER.

Clivicola FORSTER, Syn. Br. B. 1817, 55. Type, *Hirundo riparia* Linn.
Cottle Boie, Isis, 1822, 550. Same type.

"GEN. CHAR. Bill small; nostrils lateral, overhung by a straight-edged membrane. Tarsus about equal to middle toe without claw; feathered at upper end, especially on inner face, and having also a small tuft of feathers attached to posterior edge near the hind toe. Middle toe with basal joint adherent externally to near the end, half-way internally, the claws comparatively little curved, the lateral reaching beyond the base of the middle. Tail slightly forked. Color dull lustreless brown above, in *riparia* white beneath with gray pectoral band. Nests in holes in banks; eggs white." (*Hist. N. Am. B.*)

Birds of the genus *Clivicola* resemble in general appearance and habits those of the genus *Stelgidopteryx*, but may always be distinguished by the small tuft of feathers growing from the lower portion of the posterior face of the tarsus. There are also other characters, which, however, have been sufficiently mentioned on page 204.

Clivicola riparia (Linn.)

BANK SWALLOW

A young specimen, full-fledged, in the collection of Mr. H. K. Coale, of Chicago, is apparently referable to this species, but differs quite markedly from any other example I have seen. The most conspicuous feature is the decided and quite uniform buff tinge to the whole throat, except along its posterior border, which calls to mind several Central and South American species of *Stelgidopteryx* (as *S. ruficollis*, *S. uropygialis*, etc.); the shade of the buff is lighter however, while the rest of the plumage is altogether different. The brownish gray pectoral band is wider and darker than usual, while the upper parts are a shade or so darker than in the average. Another very curious difference from the ordinary style of *C. riparia* consists in the deep rufous-buff terminal margins of the wing-coverts, tertials, upper tail-coverts, and feathers of the rump, these markings being grayish or yellowish white in all other specimens I have seen. The measurements are as follows: Wing, 3.60; tail, 2.00. It is evidently not full grown. The specimen was taken at Riverdale, near Chicago, Illinois, July 4, 1877.

The distribution of the Bank Swallow within the limits of the State may be said to be very general, and it is also one of the most abundant species, occurring in colonies of greater or less extent wherever there are sand- or soft earth-banks in the vicinity of water. It not unfrequently nests in the immediate vicinity of colonies of the Rough-winged Swallow, and at Mount Carmel I have found both species not only nesting in the same ravines, but apparently mingling together in perfect harmony.

GENUS **STELGIDOPTERYX** BAIRD.

Stelgidopteryx BAIRD, Birds N. Am. 1858, 312. Type, *Hirundo serripennis* AUD.

"GEN. CHAR. Bill rather small; nostrils oval, superior, margined behind, but scarcely laterally, by membrane, but not at all overhung; the axes of the outline converging. Frontal feathers soft, and, like chin, without bristles. Tarsi equal to middle toe without claw; the upper end covered with feathers all round, none at lower end. Basal joint of middle toe adherent externally nearly to end; internally, scarcely half. Lateral toes about equal, their claws not reaching beyond base of middle claw. Tail slightly emarginate; the feathers broad, and obliquely rounded at end. Edge of the wing rough to the touch; the shafts of the fibrillæ of outer web of outer primary prolonged and bent at right angles into a short stiff hook. Nest (of *S. serripennis*) in holes in banks; eggs pure white, unpotted.

"Color dull brown above." (*Hist. N. Am. B.*)

"The birds of this genus have usually been referred to *Cotyle*, which, however, they resemble, only in color. The nostrils are ex-

posed, instead of being overhung; the tarsus is bare below, not feathered, and the lateral claws are considerably curved, and not reaching beyond the base of the lateral, as in *Cotyle*. The structure of the wing is very different." (BAIRD.)

The chief peculiarity of this genus consists in the remarkable roughness of the edge of the wing, said to occur also in *Psalidoproctes* CAB., an African genus. This characterizes only the adult male and older females, the young and many adult females having the web of the outer primary soft, as in other swallows.

Stelgidopteryx serripennis (Aud.)

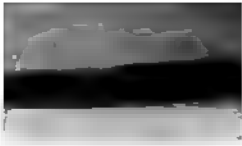
ROUGH-WINGED SWALLOW.

Popular synonyms. Rough-winged Bank Swallow, or Sand Martin; Bridge Swallow.

Hirundo serripennis AUD. Orn. Biog. iv, 1828, 368; Synop. 1829, 27; B. Am. i, 1840, 126, pl. 51.
Cotyle serripennis BOIE, 1814.—BAIRD, B. N. Am. 1823, 313; Cat. N. Am. B. 1839, No. 290.
Stelgidopteryx serripennis BAIRD, Review, 1838, 314.—COURT, Key, 1872, 114; Check List, 1873, No. 116; 2d ed. 1882, No. 164; B. N. W. 1874, 96; B. Col. Vol. 1873, 432.—B. B. & B. Hist. N. Am. B. i, 1874, 350, pl. 16, fig. 12.—RIDGW. Nom. Am. B. 1881, No. 158.

HAB. Whole of United States, except extreme northern border, and New England east of the Connecticut Valley; northwest to British Columbia; wintering in Mexico and Guatemala.

"SP. CHAR. (No. 32,209, male.) Above smoky brown, rather deeper on the head, perhaps a little paler on the rump. Larger quills and tail-feathers dusky brown; the secondaries and greater coverts sometimes lighter along their external edges. The under parts (for about half the total length) from bill to and including breast, with the sides of body and lining of wings, mouse-gray, rather lighter along the throat; the rest of under parts, in-



the other, pairs of the two sometimes occupying adjacent burrows. The Rough-winged Swallow, however, sometimes nests in holes in the abutment of bridges or even in cavities among the timbers,—a habit which the Bank Swallow has not been observed to have acquired.

By the careful observer the Rough-winged Swallow may be immediately distinguished from the Sand Martin (*C. riparia*) by the uniform "mouse-gray" or grayish brown color of the under parts, *gradually* passing into white on the under tail-coverts, the lower surface of the Bank Swallow being pure white, with a distinct band of grayish brown across the breast.

FAMILY TANAGRIDÆ.—THE TANAGERS.

This beautiful group of birds, the essential characters of which are given on page 48, is represented within the United States by only five species, one of them being somewhat doubtful as a member of our fauna; but in Tropical America, Tanagers form one of the principal elements of a bird-fauna, which for variety has no parallel in any other part of the world. It may interest the reader to know that the five families of Neotropical birds which are represented by the greatest number of species are *absolutely peculiar to America*, these families being the Tanagers (*Tanagridæ*), Tyrant Flycatchers (*Tyrannidæ*), Wood-hewers (*Dendrocolaptidæ*), Ant Thrushes (*Formicariidæ*), and Humming-birds (*Trochilidæ*). None of these families have even true representatives in any part of the Old World, the Sun-birds (*Nectariniidæ*), which some have considered as representing the Humming-birds, belonging to even a different order (*Passeres*). There are besides those named above, many families of birds, remarkable for brilliant coloring or other characteristics, which are absolutely peculiar to the Neotropical Region; prominent

The single genus of Tanagridæ, which properly finds a place in this work, is one of the most typical of the whole family, and includes two of our most brilliant songsters.

GENUS *PIRANGA* VIEILL.

Piranga VIEILL. Ois. Am. Sept. 1, 1807, iv. Type, *Muscicapa rubra* LINN.

GEN. CHAR. Bill sub-conical and rather cylindrical, the culmen moderately curved, especially toward the tip; maxillary tomium distinctly notched near the tip, and often with a more or less distinct tooth near the middle. Wings rather long (decidedly longer than the tail); primaries nine, the four outer ones longest. Tail moderate, distinctly emarginate; tarsus rather short (about equal to or but little longer than the culmen), the middle toe shorter, or about equal to the length of the bill from the nostril to the tip. Colors chiefly or partly bright red in the adult male, olive-greenish above and yellowish below in the female.

The three species occurring in eastern North America (one of them an accidental straggler from the West), may be distinguished as follows:

- A.** Wings without distinct light bands or other markings; adult males with entire body red.
 1. *P. rubra*. *Adult male*: Vermilion-red, the wings and tail similar but, with other upper parts, duller than the lower parts. *Adult female*: Ochraceous olive above, ochraceous yellow beneath; sometimes tinged, both above and below, with dull red. *Young male*: Like the female, but more or less patched with red, according to age.
 2. *P. erythromelas*. *Adult male*: Rich scarlet, with deep black wings and tail; the former sometimes with red on the wing-coverts. *Adult female*: Above grayish olive-green, beneath light greenish yellow. *Young male*: Similar to the female, but (except in first plumage) with black wings and tail, the red appearing in patches with advancing age.
- B.** Wings with two light yellowish bands.
 3. *P. ludoviciana*. *Adult male*: Back, wings, and tail black, the wings with two yellow bands; rest of plumage gamboge-yellow, the head red (varying from orange-red to crimson). *Adult female*: Wings and tail dusky grayish, the wing-bands less distinct; back grayish, or olive-green; lower parts greenish yellow; head greenish above, yellowish beneath. *Young male*: Similar to female, but the wings and tail darker, the rest of the plumage deeper yellowish, and head more or less tinged with red.

Piranga erythromelas (Vieill.)

SCARLET TANAGER.

Popular synonym. Black-winged Redbird.

Tanagra rubra LINN. S. N. ed. 12, i, 1766, 314 (nec. ed. 10, i, 1758, 181).—WILS. Am. Orn. ii, 1810, 42, pl. 11, figs. 3, 4.—NUTT. Man. i, 1832, 465.—AUD. Orn. Biog. iv, 1838, 388, pl. 354, figs. 3, 4.

Piranga rubra VIEILL. Ois. Am. Sept. 1, 1807, iv, pl. 1, fig. 12.

Pyrranga rubra Sw. & Rich. F. B. A. U, 1841, 374.—Aud. Synop. 1839, 136; B. Am. III, 1841, 226, pl. 349. BAIRD, B. N. Am. 1858, 30; Cat. N. Am. B. 1860, No. 230.—Coues, Key, 1872, 111; Check List, 1873, No. 107; 2d ed. 1882, No. 124; B. N. W. 1874, 62; B. Col. Vol. 1878, 380. B. B. & R. Hist. N. Am. B. I, 1874, 435, pl. 39, figs. 7, 8.—Ridgw. Nom. N. Am. B. 1881, No. 161.

Pyrranga erythromelas Vieill. Nouv. Dict. & Hist. Nat. xxviii, 1819, 293.

HAB. Eastern United States, breeding chiefly northward; north to Lake Winnipeg. In the interior; wintering in Cuba, Jamaica, Barbadoes, and the whole of Middle America (except western Mexico), and south to Trinidad and Ecuador.

"SP. CHAR. Bill shorter than the head. Second quill longest; first and third a little shorter. Tail moderately forked. Male. Whole head and body continuous, pure, intense scarlet, the feathers white beneath the surface, and grayish at the roots. Wings and tail, with the scapulars, uniform intense black, the middle-coverts sometimes partly red, forming an interrupted band. Lining of wing white. A bluish tinge along sides of the rump, concealed by wings. Bill pea-green; iris brown; tarsi and toes dull blue. Female. Olive-green above, yellowish beneath. Wing and tail-feathers brown, edged with olivaceous. Length, 7.40; wing, 4.00; tail, 3.00."

"At least three years seem to be required for the assumption of the perfect plumage of the male. In the first year the young male is like the female, but has black wings and tail; in the fall red feathers begin to make their appearance, and the following spring the red predominates in patches." (*Hist. N. Am. B.*)

By far the most showy of our birds, the adult male of the Scarlet Tanager is a most brilliant creature when seen among the bright green foliage, which so effectively complements the glowing scarlet and velvety black of his plumage.

In the southern half of Illinois, the Scarlet Tanager, while not an uncommon summer resident in some localities, is decidedly a less abundant bird than his plainer but more musical relative, the Summer Redbird. He is also much more retired in his habits, preferring the high timber of the bottom lands to the upland woods.

Piranga rubra (Linn.)**SUMMER TANAGER.**

Popular synonyms. Vermillion Tanager; Red Tanager; Red Bee-bird; Summer Redbird.

Fringilla rubra LINN. S. N. ed. 10, 1, 1758, 181.

Muscicapa rubra LINN. S. N. ed. 12, 1, 1766, 326.

Piranga rubra VIEILL. Ols. Am. Sept. 1, 1807, p. iv.

Tanagra aestiva GMEL. S. N. 1, 1788, 889.—WILS. AM. ORN. 1, 96, pl. 6, fig. 3.—NUTT. MAN. 1, 1832, 460.—AUD. ORN. BIOG. 1, 1831, 232; v, 1839, 518, pl. 44.

Pyranga aestiva VIEILL. 1819.—AUD. Synop. 1839, 136; B. AM. III, 1831, 222, pl. 206.—BAIRD, B. N. AM. 1858; 301; Cat. N. AM. B. 1859, No. 321.—COUES, Key, 1872, 111; Check List 1873, No. 108; 2d ed. 1882, No. 155; B. N. W. 1874, 82; B. Col. Val. 1878, 352.—B. B. & R. Hist. N. AM. B. 1, 1874, 441, pl. 20, figs. 5, 6 ("var. *aestiva*").—RIDGW. Nom. N. AM. B. 1881, No. 164.

Tanagra coccinea BODD. Tabl. P. E. 1783, 46 (ex. Pl. Enl. 741).

HAB. Eastern United States, northeast to Connecticut Valley, or, casually, even to Nova Scotia, but abundant only south of 40°, breeding throughout its United States range; wintering in middle America and northern South America, as far as Ecuador and Peru; Cuba; Jamaica. (Replaced in southwestern United States and western Mexico by *P. rubra cooperi*.)

SP. CHAR. Bill nearly as long as the head, without any median tooth. Tail nearly even, or slightly rounded. *Adult male.* Rich vermillion-red, the upper parts duller and darker. Bill (in fresh specimens), varying from light pinkish, more salmon-colored on mandible and darker on culmen, to wax-yellow, the maxilla more olive, with darker culmen; iris brown; feet lilac-gray. *Adult female.* Yellowish olive above, light ochrey yellow beneath. Bill, etc., as in the male. Total length, 7.45-7.95; extent, 11.50-12.25; wing, 3.70-3.95; tail, 2.90-3.15.

The male requires several years to attain the full plumage, immature individuals showing a mixture of red and yellow, in relative proportions according to the age. Some females show more or less of red, one (No. 82,216, U. S. Nat. Mus.) shot at Wheatland, Indiana, May 21, 1881, having the plumage more than one half red, the red color being of greater extent, in fact, than on the male, which was killed by the same shot! The tint of the red is very peculiar, however, being of dull Chinese orange, instead of pure rosy vermillion, as in the male.

In at least the southern half of Illinois the Summer Redbird is an abundant species in dry upland woods. It is moreover a very familiar species, nesting habitually in trees along the roadside and even in the midst of towns. For this reason it is much more frequently seen than the Scarlet Tanager, of which it is supposed by many people to be a variety or special plumage. Besides being a more abundant and familiar species, its notes are much louder. The ordinary one sounds like *pa-chip-it-tut-tut-tut*, or, as Wilson expresses it, *chicky-chucky-chuck*. The song resembles in its general

character, that of the Scarlet Tanager, but is far louder, better sustained, and more musical. It equals in strength that of the Robin, but is uttered more hurriedly, is more "wiry," and much more continued.

The food of this bird consists to a great extent of hornets, wasps, and bees, on which account it is to a greater or less extent known to farmers as the "Red Bee-bird."

The nest is usually placed near the extremity of a horizontal branch of an oak tree (preferably a white or post oak), alongside the edge of a wood, trees standing by a roadside being frequently selected. The height at which it is placed varies, usually from twelve to twenty feet above the ground, although the writer found one which was not more than four and a half feet, and another which was nearly thirty feet up. Its average elevation is such that a man standing upon the seat of a wagon could easily reach, either with his hand or whip, the majority of them. The nest is a thin and shallow but very firm structure, composed of loosely interwoven *wiry grass-stems*, often with the seed panicles attached, and is so thin that the eggs can almost always be seen by one standing underneath the nest. The eggs are usually three in number, and are similar in color and markings to those of the Scarlet Tanager, but somewhat larger.

In the extreme northern portion of the State, according to Mr. Nelson, it is "a rare summer visitant," there being "but few records of its occurrence."

At Mount Carmel the dates of arrival noted by me were April 20 to 22, and at Wheatland, Indiana, April 18 to 23. At

FAMILY FRINGILLIDÆ.—THE FINCHES.

"CHAR. Primaries nine. Bill very short, abruptly conical, and robust. Commissure strongly angulated at base of bill. Tarsi scutellate anteriorly, but the sides with two undivided plates meeting behind along the median line, as a sharp posterior ridge. Eyes hazel or brown, except in *Pipilo* where they are reddish or yellowish. Nest and eggs very variable as to character and situation.

"All the United States species may be provisionally divided into four subfamilies (the European House-Sparrow forming a fifth), briefly characterizable as follows:

"**Coccothraustinæ.** Bill variable, from enormously large to quite small; the base of the upper mandible always provided with a close-pressed fringe of bristly feathers (more or less conspicuous) concealing the nostrils. Wings very long and pointed, usually one half to one third longer than the forked or emarginate tail. Tarsi short.

"**Pyrgitinae** [= **Passerinae**]. Bill robust, swollen, arched above, without distinct ridge. Lower mandible at base narrower than upper. Nostrils covered; side of maxilla with stiff appressed bristles. Tarsi short, not longer than middle toe. Tail shorter than the somewhat pointed wings. Back streaked; under parts not streaked.

"**Spizellinae.** Embracing all the plain-colored sparrow-like species marked with longitudinal stripes. Bill conical, always rather small; both mandibles about equal. Tarsi lengthened. Wings and tail variable. Lateral claws never reaching beyond the base of the middle claw.

"**Passerellinae.** Sparrow-like species, with triangular spots beneath. Legs, toes, and claws very stout; the lateral claws reaching nearly to the end of the middle ones.

"**Spizinae.** Brightly colored species, usually without streaks. Bill usually very large and much curved; lower mandible wider than the upper. Wings moderately long. Tail variable." (*Hist. N. Am. B.*)

SUBFAMILY COCCOTHTRAUSTINÆ.—THE TRUE FINCHES.

"CHAR. Wings very long and much pointed; generally one third longer than the more or less forked tail; first quill usually nearly as long as or longer than the second. Tertiaries but little longer, or equal to the secondaries, and always much exceeded by the primaries. Bill very variable in shape and size, the upper mandible, however, as broad as the lower; nostrils rather more lateral than usual; and always more or less concealed by a series of small bristly feathers applied along the base of the upper mandible; no bristles at the base of the bill. Feet short and rather weak. Hind claw usually considerably longer than the middle anterior one; sometimes nearly the same size.

"In the preceding diagnosis I have combined a number of forms, all agreeing in the length and acuteness of the wing, the bristly feathers along the base of the bill, the absence of conspicuous bristles on the sides of the mouth, and the shortness of the feet. They are all strongly marked and brightly colored birds, and usually belong to the more northern regions.

"The bill is very variable, even in the same genus, and its shape is to a considerable extent of specific rather than of generic importance. The fringe of short bristles along the base of the bill, concealing the nostrils, is not appreciable in *Plectrophanes* [= *Plectrophenax*] (except in *P. nivalis*), but the other characteristics given above are all present." (*Hist. N. Am. B.*)

GENERA.

A. Bill enormously large and stout; the lateral outline as long as that of the skull. Culmen gently curved.

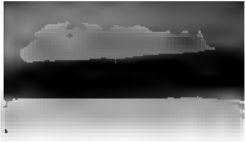
Colors greenish, yellow, and black.

Coccothraustes. First quill equal to the second. Wings one half longer than the tail. Lateral claws equal, reaching to the base of the middle claw. Claws much curved, obtuse; hinder one but little longer than the middle.

B. Bill smaller, with the culmen more or less curved; the lateral outline not so long as the skull. Wings about one third longer than the tail, or a little more; first quill shorter than the second. Claws considerably curved and thickened; hinder most so, and almost inappreciably longer or even shorter than the middle anterior one. Tarsus shorter than the middle toes. Lateral toes unequal.

a. Colors plain gray and black, never streaked; breast red in the male of some species.

Pyrrhula. Bill excessively swollen; as broad and as high as long, not half length of head; upper outline much curved. Tail-coverts covering two thirds the tail, which



a. *Points of mandibles overlapping.*

Loxia. Tarsus shorter than the middle toe. Bill much compressed, the mandibles falcate, with the points crossing like the blades of scissors. Claws very large; lateral extending beyond the base of the middle. Colors red or gray, streaked in young.

b. *Points of mandibles not overlapping.*

Acanthis. Tarsus equal to the middle toe. Bill very acutely conical; outlines and commissure perfectly straight. Lateral toes reaching beyond the base of the middle one. No ridge on the side of the lower mandible. Streaked; a crimson crown (except in one species).

Leucosticte. Culmen slightly decurved; commissure a little concave. Bill obtusely conical; not sharp-pointed. A conspicuous ridge on the side of the lower mandible. Claws large; the lateral not reaching beyond the base of the middle one. Colors red and brown.

D. Hind claw much the largest; decidedly less curved than the middle anterior one. Tarsus longer than the middle toe. Lateral toes equal; reaching about to the base of the middle claw. Hind toe as long as or longer than the middle one. Bill very variable; always more or less curved and blunted. Palate somewhat tuberculate; margins of lower jaw much inflexed. Tail slightly emarginate or even. Wings one half longer than the tail. First quill as long as the second.

Plectrophenax. Angle of gonyes opposite middle of culmen, the gonyes greatly ascending. Maxilla shallower than mandible. Middle toe and claw about equal to tarsus, the claw reaching beyond that of the hallux. Secondaries mostly white.

Calcarius. Bill much as in *Plectrophenax*. Middle toe and claw shorter than tarsus, the claw not reaching as far as to the tip of the hind claw. No white on secondaries.

Rhynchophanes. Bill very stout, conical, the angle of the gonyes decidedly posterior to the middle of the bill, the maxilla equal in depth to the mandible.

GENUS COCCOTHAUSTES BRISSON.

Coccothraustes BRISS. ORN. III, 1760, 218. Type, *Loxia coccothraustes* LINN.

Subgenus *Hesperiphona* BONAPARTE.

Hesperiphona BONAP. COMPTES RENDUS, xxi, Sept. 1850, 424. Type, *Fringilla vespertina* COOP.

"GEN. CHAR. Bill largest and stoutest of all the United States fringilline birds. Upper mandible much vaulted; culmen nearly straight, but arched toward the tip; commissure concave. Lower jaw very large, but not broader than the upper, nor extending back, as in *Guiraca*; considerably lower than the upper jaw. Gonyes unusually long. Feet short; tarsus less than the middle toe; lateral toes nearly equal, and reaching to the base of the middle claw. Claws much curved, stout and compressed. Wings very long and pointed, reaching beyond the middle of the tail. Primaries much longer than the nearly equal secondaries and tertials; outer two quills longest; the others rapidly graduated. Tail slightly forked; scarcely more than two thirds the length of the wings, its coverts covering nearly three fourths of its extent. Nest and eggs unknown." (*Hist. N. Am. B.*)

Coccothraustes vespertinus (Coop.)

EVENING GROSBEAK.

Fringilla vespertina COOPER ANN. LYN. N. Y. I, 1825, 220.—NUTT. MAN. I, 1832, 594.—AUD. ORN. BIOG. IV, 1839, 515; V, 1839, 235, pls. 373, 425.

BIRDS OF ILLINOIS.

Speotyto cunicularia Sw. & Rich. F. B. A. ii, 1831, 269, pl. 68.—Aud. Synop. 1839, 134; 1877, pl. 207.

Boia BONAP. 1850. BAIRD, B. N. Am. 1858, 409; Cat. N. Am. B. 1869, Key, 1872, 127, Check List, 1873, No. 136; 2d ed. 1882, No. 189; B. N. W. & R. Hist. N. Am. B. i, 1875, 449, pl. 22, fig. 1.—Ridgw. Nom. N. Am. B.

North American, south, in mountain districts, to elevated regions of the Saskatchewan, and east, especially in winter, to the Great Northern Atlantic States (New York, Ohio, etc.).

Bill greenish, dusky at the base. Anterior half of the body dusky, passing into yellow to the rump above, and the under tail-coverts below. A broad white band continued on each side over the eye, axillaries, and under tail-coverts yellow. Feathers along the extreme base of the bill, the upper tail-coverts, and tail black; inner greater wing-coverts and tail 7.30; wing, 4.30; tail 2.75.

Young having the head of a dull olivaceous brown, which color also of the rump and other parts is replaced by a yellowish ash. They are spotted with white. The white of the wing is much restricted, a blackish line on each side of the chin." (*Hist. N. Am. B.*)

Adult. Generally similar to adult male, but tertials having inner webs grayish, the lower webs grayish next the shaft; inner greater wing-coverts tipped with dingy yellow, and upper tail-coverts tipped with dingy yellow, and inner tail-coverts indistinctly tipped with grayish, passing into whitish terminal band mixed with feathers of an olivaceous yellow. (Male, Santa Fe, Col., E. W. Nelson.)

This bird is a winter visitant to the more northern portions of the State, its appearance being, however, very irregular, and it is sometimes mistaken for the Bohemian Wax-wing (*Ampelis garrulus*). Mr. Nelson

"It will, therefore, be a matter of interest to ornithologists to learn that this exquisite bird is sometimes found further south and at a less advanced season of the year. About the year 1872, while hunting during the fine autumn weather, in the woods about Eureka, Illinois, I fell in with a flock of these Grosbeaks, and succeeded in killing six of their number. They were feeding in the tree tops on the seeds of the sugar maple, just then ripening, and were excessively fat. They were very unsuspicious, and for a long time appeared to be incapable of realizing the havoc that I was making in their ranks, as they tarried in the neighboring boughs and uttered their call-notes to summon their missing companions. As the skins of these birds afterward passed out of my hands, I can not now give with certainty the year of their capture. Eureka is in Woodford county, and one hundred and twenty miles nearly due south of Freeport. It is about the same distance south of Waukegan."

According to Mr. Thos. H. Douglas, of Waukegan (in letter dated January 2, 1882), "these birds, when shot at, will fly into the nearest large evergreens, where they sit perfectly still, and are very hard to be seen, but after a few moments they begin to call and can easily be discovered. I have repeatedly shot two or more out of the same tree. They feed on the seeds of evergreens and sugar-maple buds. Have known them to stay until May, when they ate the buds of black ash and cottonwood. They were feeding on the latter in company with the Rose-breasted Grosbeak. I think we will get some this winter, as there are very few evergreens seeding north of us, and what are, are mostly *blind* seeds. I had one slightly wounded in a cage for several days in the green-house, where it got to be very tame, and seemed to prefer hemp seed to any other kind, although I tried it with about a dozen kinds of evergreen seeds."

GENUS **PINICOLA** VIEILLOT.

Pinicola VIEILL. Ois. Am. Sept. 1; 1807, 4, pl. 1, fig. 13.

"CHAR. Bill short, nearly as high as long; upper outline much curved from the base; the margins of the mandibles rounded; the commissure gently concave, and abruptly deflexed at the tip; base of the upper mandible much concealed by the bristly feathers covering the basal third. Tarsus rather shorter than the middle toe; lateral toes short, but their long claws reach the base of the middle one, which is longer than the hind claw. Wings moderate; the first quill rather shorter than the second, third, and fourth. Tail rather shorter than the wings; nearly even." (*Hist. N. Am. B.*)

THE CONCLUSION

[illegible]

Has Northern undergrowth notes of Northern Hemisphere. In North America breeding far north to at least 80° in higher western mountains, and in winter migrating south to as beyond 60° in Eastern Province.

♂♂. Crown, bill and legs black. New. General color light cinnamon-red at rest, not conspicuous above, however except in the head, the feathers showing brownish centers on the base, where the red is darker. Loral region, base of lower jaw and round sides under the wing, abdomen, and posterior part of the body with under tail-coverts, ash, whitest behind. Wing with two white bands across the tips of the greater and middle coverts, the outer edges of the middle and white broadest in the primaries. In secondaries tinged with red. Female ash, brownish above, tinged with greenish red below beneath; top of head, rump, and upper tail-coverts brownish gamboge-yellow. Wings much as in the male. Length about 3.50; wing, 4.50; tail, 4.00. Young like female, but more ash." (*Ibid.* N. Am. B.)

The Pine Grosbeak—much the largest of the North American *Fringillidae*—is an irregular winter visitant to the more northern portions of the State. Mr. Thos. H. Douglas, of Waukegan, writes me, under date of January 2, 1884, that, having been informed of a

While the western portions of North America possess three species of this genus (*C. frontalis*, the familiar House Finch, of the Valley portions, *C. purpureus californicus*, or California Purple Finch, of the Pacific coast, and *C. cassini*, Cassin's Purple Finch, of the higher mountains), but a single species occurs in the eastern portions of the continent. This, the common Purple Finch (*C. purpureus*), occurs within the United States chiefly in winter and early spring, the greater part of its breeding range being located beyond our northern boundary.

***Carpodacus purpureus* (Gmel.)**

PURPLE FINCH.

Popular synonyms. Purple Linnet; Purple Grosbeak; Strawberry Bird (Connecticut); Rosy Linnet; Roseate Grosbeak or Finch.

Fringilla purpurea GMEL. S. N. i, 1788, 923.—WILS. Am. Orn. i, 1808, 119, pl. 7, fig. 4; v, 1812, 87, pl. 43, fig. 3.—AUD. Orn. Biog. i, 1831, 24; v, 1839, 500, pl. 4.—NUTT. Man. i, 1832, 529.

Erythropsiza purpurea BONAP. 1838.—AUD. B. Am. iii, 1841, 170, pl. 196.

Carpodacus purpureus GRAY.—BAIRD, B. N. Am. 1858, 412; Cat. N. Am. B, 1859, No. 305.—COUES, Key, 1872, 128; Check List, 1873, No. 139; 2d ed. 1882, No. 194; B. N. W. 1874, 106.—B. B. & R. Hist. N. Am. B. i, 1874, 465, pl. 21, figs. 10, 11.—RIDGW. Nom. N. A. B. 1881, No. 168.

HAB. Eastern temperate North America, but breeding chiefly north of the United States; in winter, south to Gulf coast.

"SP. CHAR. Second quill longest; first shorter than third,—considerably longer than the fourth. Body crimson, palest on the rump and breast, darkest across the middle of back and wing-coverts, where the feathers have dusky centres. The red extends below continuously to the lower part of the breast, and in spots to the tibiæ. The belly and under tail-coverts white, streaked faintly with brown, except in the very middle. Edges of wings and tail-feathers brownish red; lesser coverts like the back. Two reddish bands across the wings (over the ends of the middle and greater coverts). Lores dull grayish. Length, 6.25 inches; wing, 3.34; tail, 2.50; bill above, .46. *Female.* Olivaceous brown above; brighter on the rump. Beneath white; all the feathers everywhere streaked with brown, except on the middle of the belly and under coverts. A superciliary light stripe."

Although best known as a spring migrant, when the flocks are rendered conspicuous by reason of their musical warblings, the Purple Finch is a winter resident in the more southern portions of the State. The writer first made its acquaintance at Mount Carmel, in mid-winter, under circumstances of delightful memory. The ground was covered with snow,—the weather clear and bright, but cold. Crossing a field in the outskirts of the town, and approaching the line of tall, dead "rag-weeds" (*Ambrosia trifida*) which grew thickly in the fence corners, a straggling flock of birds was startled, flew a short distance, and again alighted on the tall weed-stalks, uttering as they flew a musical, metallic *chink, chink*. The beautiful

crimson color of the adult males, heightened by contrast with the snow, was a great surprise to the writer, then a boy of thirteen, and excited intense interest in this, to him, new bird. On subsequent occasions during the same winter, they were found under like circumstances, and also in "sycamore" or buttonwood trees, feeding on the small seeds contained within the "balls" of this tree.

The Purple Finch may possibly breed in the extreme northern portion of the State, but has not yet been recorded, so far as the writer is aware, as doing so.

From *History of North American Birds* (Vol. I., pp. 463, 464) we quote the following paragraphs, by Dr. T. M. Brewer, pertaining to the breeding habits of this species:

"The Purple Finch, or, as it is generally known in New England, the Linnet, is one of our sweetest, best, and most constant songsters, and is often trapped and sold as a cage bird. They soon become accustomed and partially reconciled to their confinement, but sing only during a small part of the year. When one of these birds, confined in a cage, is hung outside the house, in the country, he is sure to draw around him quite a number of his species, and this furnishes the dealer a ready means of capturing them.

"The song of the Purple Finch resembles that of the Canary, and though less varied and powerful, is softer, sweeter, and more touching and pleasing. The notes of this species may be heard from the last of May until late in September, and in the long summer evening are often continued until it is quite dark. Their song has all the beauty and pathos of the Warbling Vireo, and greatly



"The elongated, compressed, falcate-curved, and overlapping mandibles readily characterize this genus among birds. This feature, however, only belongs to grown specimens, the young having a straight bill as in other Finches." (*Hist. N. Am. B.*)

The two North American species of this genus may be very readily distinguished by the uniformly brownish wings of *L. minor*, and the conspicuous white spots or bands on the greater and middle wing-coverts in *L. leucoptera*,—these differences characterizing both sexes, at all ages.

Loxia curvirostra minor (Brehm).

AMERICAN CROSSBILL.

Popular synonym. American Red Crossbill.

Loxia curvirostra FORST. Phil. Trans. lxii, 1772, 402 (*nec* LINN).—NUTT. Man. i, 1832, 583.—AUD. Orn. Biog. ii, 1834, 559; v, 1839, 511, pl. 197; Synop. 1839, 128; B. Am. iii, 1841, 186, pl. 200.

Curvirostra americana WILS. AM. ORN. iv, 1811, 44, pl. 31, figs. 1, 2.—BAIRD, B. N. Am. 1858, 496; Cat. N. Am. B. 1859, No. 818.

Loxia curvirostra var. *americana* COUES, Key, 1872, 351; Check List, 1873, No. —; B. N. W. 1874, 109.—B. B. & R. Hist. N. Am. B. i, 1874, pl. 23, figs. 1, 4.

Loxia curvirostra americana RIDGW. NOM. N. Am. B. 1881, No. 172.—COUES, 2d Check List, 1882, No. 199.

Curvirostra minor BREHM, NAUM. 1853, 193.

Loxia curvirostra minor RIDGW. PROC. U. S. NAT. MUS. viii, 1885, 354.

HAB. Temperate North America, breeding from northern border of United States north to portions of Alaska, and on higher mountain ranges south to Pennsylvania, Eastern Tennessee, etc. (In Rocky Mountains and other higher western ranges replaced in summer by the much larger *L. curvirostra mexicana*.) South to Virginia, Tennessee, etc.

"SP. CHAR. Old male dull red (the shade differing in the specimen, sometimes brick-red, sometimes vermillion, etc.); darkest across the back; wings and tail dark blackish-brown. Young male yellowish. Female dull greenish-olive above, each feather with a dusky center; rump and crown bright greenish yellow. Young olive above; whitish beneath, conspicuously streaked above and below with blackish. Male about 6 inches; wing, 3.30; tail, 2.25." (*Hist. N. Am. B.*)

Perhaps no birds are more erratic in their movements than the Crossbills; and this observation applies no less to their habits during the breeding season than at other times. They appear and disappear from a given locality in the most unexpected manner, and it probably cannot be said of any district that any species of this genus is a constant inhabitant during any portion of the year. In Illinois, the present species is an irregular visitant throughout the State, being of course more rare and uncertain in the southern than in the northern portion.

Having had few opportunities for observing the habits of this species, we quote the following from *History of North American Birds* (Vol. I., pp. 487, 488), written by Dr. Thos. M. Brewer:

"The Crossbills are extremely gentle and social, are easily approached, caught in traps, and even knocked down with sticks. Their food is chiefly the seeds of the *Coniferae*, and also those of plants. Audubon's statement that they destroy apples merely to secure the seeds is hardly accurate. They are extravagantly fond of this fruit, and prefer the flesh to its seeds. Their flight is undulating, somewhat in the manner of the Goldfinch, firm, swift and often protracted. As they fly, they always keep up the utterance of their loud, clear call-notes. They move readily on the ground, up or down the trunks and limbs of trees, and stand as readily with their heads downward as upright.

"So far as is known, these Crossbills breed in mid-winter, or very early in the spring, when the weather is the most inclement. The nest and eggs of this species were procured by Mr. Charles S. Paine, in East Randolph, Vt., early in the month of March. The nest was built in an upper branch of an elm,—which, of course, was leafless,—the ground was covered with snow, and the weather severe. The birds were very tame and fearless, refusing to leave their eggs, and had to be several times taken off by the hand. After its nest had been taken, and Mr. Paine was descending with it in his hand, the female again resumed her place upon it, to protect the eggs from the biting frost. The eggs were four in number and measured .85 by .58 of an inch. They have a greenish white

Curvirostra leucoptera WILS. Am. Orn. iv, 1811, 48, pl. 31. fig. 3.—BAIRD, B. N. Am. 1858, 427; Cat. N. Am. B, 1859, No. 319.—COUES, Key, 1872, 129.

Loxia atrata von HOMER, J. f. O. 1879, 179.

HAB. Northern North America, breeding from northern New England and northern Rocky Mountain districts northward. (Said by AUDUBON to breed in mountainous portions of Pennsylvania.) In winter, south to or beyond 39°, in some seasons. No Pacific coast record south of Alaska; accidental in Greenland and in Europe.

SP. CHAR. Bill greatly compressed, and acute towards the point. *Male* carmine-red, tinged with dusky across the back; the sides of the body under the wings streaked with brown; from the middle of belly to the tail-coverts whitish, the latter streaked with brown. Scapulars, wings, and tail black; two broad bands on the wings across the ends of greater and median coverts; white spots on the end of the inner tertiaries. *Female* brownish, tinged with olive-green in places; feathers of the back and crown with dusky centres; rump brownish yellow. Length about 6.25; wing, 3.50; tail, 2.60.

The white bands on the wings distinguish this species from the preceding, although there are some other differences in form of bill, feet, wing, etc. There is less variation in form and color among specimens than in the preceding. The American White-winged Crossbill differs from its European analogue, *L. bifasciata*, in the more slender body and bill, and in having the body pomegranate-red, with blackish back, instead of cinnabar-red, as in *curvirostra* and *minor*. Bonaparte and Schlegel quote the American species as occurring in the Himalaya Mountains, and perhaps Japan, but throw doubts on the supposed European localities.

In the *Journal für Ornithologie* for 1879, p. 179, von Homyer describes as a new species ("*Loxia atrata*") what appears to be a variation of *L. leucoptera*; but the circumstance that the supposed species is based on two specimens "exactly alike" suggests the possibility of the form in question proving eventually to be perhaps a local race of *L. leucoptera*. A free translation of the original description, in German, is as follows:

"Somewhat smaller than *L. leucoptera*, but with about the same length of wing, the tail at least 10 mm. shorter. Distinguished by its coloration. The red in ground tone is nearest that of the 'Hakengimpel' [*Pinicola enucleator*], but everywhere darker, and saturated, as it were, with black, this color extending indefinitely both on the back as well as on the middle of the belly to the breast, as also on the lower tail-coverts. The feet are even darker colored than in *leucoptera*. The wing-bands are unaffected for the most part, although not quite so broad. This is especially seen in the first or terminal band, which begins, scarcely visible, at the edge of

the wing, and remains very inconsiderable to the middle, then quickly expands to a great rounded spot. The extent of the second band is everywhere much more limited than in *leucoptera*.

"This is decidedly not a melanism, as is shown, not alone by the character of the coloration, but by the occurrence of two old males exactly alike.

"My two birds came from North America."

The same general remarks found under *Loxia americana* will apply equally well to the present species. The White-winged Crossbill is, however, decidedly a more northern bird so far as its summer habitat is concerned, breeding abundantly in the subarctic portions of the continent from northern Labrador and the western shores of Cumberland Gulf to Alaska, or quite to the northward of the breeding range of *L. americana*.

Mr. Thos. H. Douglas, of Waukegan, sends me, under date of November 17, 1888, the following exceedingly interesting note on this species:

"Last winter we were visited by several flocks of *Loxia leucoptera* and a few of *L. americana*. The former were in a stained condition of plumage. They stayed around piles of pine and spruce cones we had gotten the seeds out of. They came about the first of February, and some stayed as late as April 1. One of the *americana* and two *leucoptera* were here until the latter part of April. Although these two species got along well together when out of doors (would pick seeds out of the same cone), when in captivity (as we had them several times) the former would not let the latter feed, and killed



summer and came back the next day and allowed itself to be taken by hand. The males since moulting are about the color of *Dendroica aestiva*."

In the spring of 1899, Mr. Jillson, of Hudson, Mass., sent Dr. Brewer a pair of these birds which he had captured the preceding autumn. They were very tame, and were exceedingly interesting little pets. Their movements in the cage were like those of caged parrots in every respect, except that they were far more easy and rapid. They clung to the sides and upper wires of the cage with their feet, hung down from them, and seemed to enjoy the practice of walking with their head downward. They were in full song, and both the male and female were quite good singers. Their songs were irregular and varied, but sweet and musical. They ate almost every kind of food, but were especially eager for slices of raw apples. An occasional larch cone was also a great treat to them. Although while they lived they were continually bickering over their food, yet when the female was accidentally choked by a bit of egg shell her mate was inconsolable, ceased to sing, refused his food, and died of grief in a very few days.

GENUS *ACANTHIS* BECHSTEIN.

Acanthis BECHST. Orn. Taschen. Deutsch. 1808, 125. Type, *Fringilla linaria* LINN.

Egiotus CABANIS, Mus. Hein. 1861, 161. Type, *Fringilla linaria* LINN.

"SP. CHAR. Bill very short, conical, acutely pointed, the outlines sometimes concave; the commissure straight; the base of the upper mandible and the nostrils concealed by stiff appressed bristly feathers; middle of the mandible having several ridges parallel with the culmen. Inner lateral toe rather the longer, its claw reaching the middle of the middle claw; the hind toe rather longer, its claw longer than the digital portion. Wings very long, reaching the middle of the tail; second quill a little longer than the first and third. Tail deeply forked." (*Hist. N. Am. B.*)

Species and Races.

COMMON CHARACTERS. *Adult*. Above streaked with dusky upon a brownish, or brown and whitish, ground; wing-coverts tipped with whitish or pale brown. Beneath whitish, usually streaked on the sides with dusky. An indistinct, lighter superciliary stripe. Crown crimson (except in *A. brewsteri*.) *Male*. Breast more or less tinged with rose-pink. *Female*. Breast not tinged with pinkish. *Young*. Without any pink on breast. *A.* Crown of adult with a patch of crimson. Chin with a dusky spot.

1. *A. hornemannii*. Bill very short, the depth at the base nearly equal to or greater than its length. Rump wholly white, or with white largely prevailing. Breast in adult male delicate peach-blossom pink. Lower tail-coverts with white shafts.

a. Bill very stout, rather obtuse, the depth through the base about equal to length of culmen. Wing, 3.25 or more; tail, 2.70 or more. *Hab.* Greenland; northern Labrador (Ungava) in winter *A. hornemannii*.

- b. Bill more slender, very acute, the depth through base less than depth of culmen. Wing, 3.10 or less; tail, 2.00 or less. *Hab.* Arctic America, except Greenland; south, in winter to northern U. S. *A. hornemannii exilipes*.
2. *A. linaria*. Bill more slender, the depth through the base much less than length of culmen. Rump heavily streaked with dusky, the latter usually largely prevailing. Breast in adult male intense rose-pink. Lower tail-coverts with dusky shafts.
- a. Wing, 3.00 or less, tail, 2.50 or less. *Hab.* Arctic and subarctic America, except Greenland; in winter to U. S. *A. linaria*.
- b. Wing usually more than 3.00 inches; tail, 2.00 or more. Bill much larger and stouter, less acute at tip. *Hab.* Greenland south in winter to northern border of U. S. *A. linaria rostrata*.
- B. Adult without red patch on crown, or dusky spot on chin.
3. *A. brewsteri*. Above olive-brown, streaked with dusky, the rump tinged with sulphur-yellow. Below whitish, tinged on jugulum with fulvous yellow, the sides and crissum streaked with dusky. Wings with two pale fulvous bands. Wing, 3.00; tail, 2.50. *Hab.* Massachusetts in winter. (Only one specimen known.)

Acanthis hornemannii exilipes (Coues).

HOARY RED-POLL.

Popular synonyms. Coues' Redpoll, or Linnet; White-rumped Redpoll.

Fringilla borealis AUD. Orn. Biog. v, 1830, 57, pl. 400 (*neo* VIMILL).

Linaria borealis AUD. B. Am. III, 1841, 120, pl. 178 (*neo* TOWN).

Egiothus exilipes COUES, Proc. Phil. Ac. 1861, 365; 1866, 187; 2d Check List, 1892, No. 210.

Egiothus linaria var. *exilipes* COUES, Key, 1872, 131; Check List, 1873, No. 146 b.

Egiothus canescens var. *exilipes* B. B. & B. Hist. N. Am. B. 1, 1874, 493, pl. 22 fig. 2.

Egiothus canescens exilipes RIDGW. Nom. N. Am. B. 1881, No. 178 a.

Acanthis hornemannii exilipes STEFNEGER, "The Auk," 1, 1884, 152.

HAB. Arctic America (except Greenland) migrating southward in winter to northern Illinois, Massachusetts, etc.

SP. CHAR. Adult male in summer General color white, this immaculate on rump and lower parts (the sides occasionally streaked, however); the jugulum and sides of

Acanthis linaria (Linn.)

REDPOLL.

Popular synonyms. Common Redpoll; Dusky Redpoll; Snowbird; Redpoll Linnet.

Fringilla linaria LINN, S. N. ed. 10, i, 1758, 182; ed. 12, i, 1766, 322.—WILS. Am. Orn. iv, 1811, 41, pl. 30, fig. 4; ix, 1814, 126.—NUTT. Man. i, 1832, 512.—AUD. Orn. Biog. iv, 1838, 523, pl. 375.

Ægiothus linaria CAB. Mus. Hein. 1851, 161.—BAIRD, B. N. Am. 1858, 428; Cat. N. Am. B. 1859, No. 320.—COUES, Key, 1872, 130; Check List, 1873, No. 146; 2d ed. 1882, No. 207; B. N. W. 1874, 114.—B. B. & R. Hist. N. Am. B. i, 1874, 493, pl. 22, figs. 3, 5.—RIDGW. Nom. N. Am. B. 1881, No. 179.

Acanthis linaria BON. & SCHL. Monog. Lox. 1850, pl. 52.

Linaria minor SW. & RICH. F. B. A. ii, 1831, 267.—AUD. Synop. 1839, 114; B. Am. iii, 1841, 122, pl. 179.

Ægiothus fuscescens COUES, Proc. Phil. Ac. 1861, 222.

Ægiothus linaria var. *fuscescens* COUES, Key, 1872, 131.

HAB. Northern North America, (except Greenland) south, in winter, to about lat. 40° (occasionally farther); breeds chiefly, if not entirely, north of the United States. Inhabits, also, northern portions of the Old World.

SP. CHAR. *Adults in spring and winter.* Ground color of the occiput, nape, scapulars, and interscapulars, brownish white, each feather with medial streak of dusky brown; rump and upper tail-coverts white, with the streaks in sharper contrast. Wings clear brownish dusky, with two conspicuous white bands, formed by tips of middle and secondary coverts; tertials broadly, and secondaries narrowly, edged with white,—this broader on inner webs. A narrow frontal band (tinged with brownish), an obscure superciliary stripe, and the lower parts in general, white; sides streaked with dusky, and lower tail-coverts each with a medial streak of the same. On the forehead and vertex a somewhat quadrate patch of intense carmine. Nasal plumules, lores, and a small, somewhat quadrate, gular spot, dark silky brown. Bill yellow, the culmen and gonys black.

Male. Throat, jugulum, and breast, rosy carmine (extending upward over the malar region, and backward over the sides almost to the flanks); rump tinged with the same.

Female. No red except on the crown, where its tint is less intense; dusky gular spot larger, extending farther on to the throat.

Adult in breeding (midsummer) plumage (—"Æ. fuscescens" COUES). The pattern the same as above, but the dark tint intensified and spread so as to almost entirely obliterate any lighter markings, except the streaks on the rump; the wing-bands, as well as the dorsal streaks, obsolete; streaks on the sides broader; frontal band dusky, like the occiput. Red tints slightly intensified. Bill wholly dusky.

Male. Throat, jugulum, breast, and tinge on sides and rump, rosy carmine.

Female. Without red on the breast.

Young, first plumage. Whole head, neck, and breast streaked, and without trace of red.

Dimensions. *Male.* Wing, 2.80; tail, 2.30-2.35; bill, .35-.36×.20-.25; tarsus, .53-.55; middle toe, .30-.33. *Female.* Wing, 2.70-2.80; tail, 2.30-2.35; bill, .32-.35×.23-.25; tarsus, .52-.55; middle toe, .32-.34.

The plumage of this species is quite different in summer and in winter. In the latter season the plumage is softer and more lax, and the markings better defined, though in autumn with a considerable ochraceous suffusion. In spring the colors are purer, and the

markings more sharply defined; in the breeding season the plumage assumes a burnt appearance, the dark tints intensify and spread, so that sometimes the upper parts appear almost uniformly dusky; the bill appears larger than in winter, in consequence of the less development, or wearing away, of its basal tufts. In this dusky summer condition it becomes the *Æ. fuscescens* of Coues. In the series of over two hundred examples examined, all midsummer specimens are in the plumage of *fuscenscens*, while the latter is not seen in any autumnal, winter, or spring birds.

This pretty little bird is a common and regular winter visitor in the northern portions of the State, but its occurrence in the southern portions is so rare that the writer has seen it but on one occasion at Mount Carmel. It appears in flocks, which feed upon the seeds of various herbaceous plants, and is very unsuspicious. Its breeding range includes the whole region from Labrador to Alaska, with an undetermined southern limit, which, however, probably nowhere approaches very near to the northern boundary of the United States.

According to Dr. Brewer, "their migration southward in winter is evidently caused more by want of food than by the state of the temperature. They remain in high northern regions in the most inclement weather, and often appear among us in seasons not remarkably cold, and remain until late in the spring."

Acanthis linaria rostrata (Coues)

continent it occurs chiefly in winter, though occasional summer specimens from very high latitudes appear to be scarcely smaller than Greenland samples.

Mr. H. K. Coale has taken this bird near Chicago, and has kindly sent me for examination the specimens which he secured.

GENUS *SPINUS* KOCH.

Spinus KOCH, Bayr. Zool. 1816, 233. Type, *Fringilla spinus* LINN.
Chrysomitris BOIE, Isis, 1828, 323 (same type).

"GEN. CHAR. Bill rather acutely conic, the tip not very sharp; the culmen slightly convex at the tip; the commissure gently curved. Nostrils concealed. Obsolete ridges on the upper mandible. Tarsi shorter than the middle toe; outer toe rather the longer, reaching to the base of the middle one. Claw of hind toe shorter than the digital portion. Wings and tail as in *Ægiothus*.

"The colors are generally yellow, with black on the crown, throat, back, wings and tail, varied sometimes with white.

"The females want the bright markings of the male."

"This genus differs from *Ægiothus* [= *Acanthis*] in a less acute and more curved bill, a much less development of the bristly feathers at the base of the bill, the claw of the hind toe shorter than its digital portion, the claws shorter and less curved and attenuated, and the outer lateral toes not extending beyond the base of the middle claw."—(*Hist. N. Am. B.*)

The species occurring in the eastern United States (one of them probably as a purely accidental straggler) are the following:

A. Inner webs of tail feathers with a white patch.

1. *S. tristis*. *Adult male in summer*: Rich lemon yellow, with black forehead, wings, and tail; tail-coverts, band across wing and outer wing-markings, white. *Adult female*: Wings and tail as in the male, but duller; upper parts olive, tinged with lemon-yellow; lower parts pale yellowish, or sometimes grayish white, tinged with yellow anteriorly; no black on head. *Adult male in winter*: Similar to summer female, but more brownish.

B. Inner webs of tail feathers without white patch, but with yellow bases.

2. *S. pinus*. *Adult* (sexes alike): Above grayish or brownish, below dull white, everywhere streaked with dusky; bases of secondaries and tail-feathers sulphur-yellow. *Young*: Similar, but with a fulvous suffusion, especially on tips of wing-coverts; yellow of remiges and rectrices usually more exposed.
3. *S. notatus*. *Adult male*: Entire head, neck, and jugulum, with wings and tail, black; a patch of rich yellow on bases of remiges and rectrices; upper parts greenish olive-yellow, clouded with dusky on the back; beneath rich oil-yellow. *Adult female*: Head and neck olive above and yellow beneath, like the body; wings and tail less intensely black than the male.

Spinus tristis (Linn.)**AMERICAN GOLDFINCH.**

Popular synonyms. Yellow-bird; Lettuce-bird; Salad-bird; Thistle-bird; Black-winged Yellow-bird; Black-capped Yellow-bird.

Fringilla tristis LINN. S. N. ed. 10, i, 1758, 181; ed. 12, i, 1766, 220.—WILS. Am. Orn. i, 1803, 20, pl. 1, fig. 2.—AUD. Orn. Biog. i, 1831, 172; v. 519, pl. 28.—HARR. Man. i, 1832, 567.

Carduelis tristis BP. 1825.—AUD. Synop. 1829, 116; B. Am. iii 1841, 129, pl. 22.

Chrysomitris tristis BP. 1838.—BAIRD, B. N. Am. 1892, 428; Cat. N. Am. B. 1909, No. 212. COOPER, Key, 1872, 131; Check List, 1873, No. 149; B. N. W. 1874, 116.—B. B. & R. Hist. N. Am. B. i, 1874, 471, pl. 22 figs. 7, 8.

Astragalinus tristis CAR. Mus. Hein. 1851, 129.—RIDGW. Nom. N. Am. B. 1901, No. 191. —COOPER, 2d Check List, 1892, No. 212.

Spinus tristis STELL. Auk, i, 1884, 362.

HAB. Whole of temperate North America, breeding nearly throughout its range.

"**SP. CHAR.** *Male.* Bright gamboge-yellow; crown, wings, and tail black. Lesser wing-coverts, band across the end of greater ones, ends of secondaries and tertiaries, inner margins of tail-feathers, upper and under tail-coverts and tibia white. Length, 5.25 inches; wing, 3.00. *Female.* Yellowish gray above; greenish yellow below. No black on forehead. Wing and tail much as in the male. *Young.* Reddish olive above; fulvous yellow below, two broad bands across coverts and broad edges to last half of secondaries pale rufous.

"In winter the yellow is replaced by a yellowish brown; the black of the crown wanting, that of wings and tail browner. The throat is generally yellowish; the under parts ashy brown passing behind into white." (*Hist. N. Am. B.*)

Found abundantly throughout temperate North America, familiar in habits, and conspicuous in plumage, it is no wonder that the American Goldfinch is one of our best known birds. Known familiarly as Yellow-bird, Lettuce-bird, or Garden-bird, he is present with us at all seasons of the year, although there are many times



"The Goldfinch is to a large extent gregarious and nomadic in its habits, and only for a short portion of the year do these birds separate into pairs for the purposes of reproduction. During at least three fourths of the year they associate in small flocks, and wander about in an irregular and uncertain manner in quest of their food. They are resident throughout the year in New England and also throughout the greater portion of the country, their presence or absence being regulated to a large extent by the abundance, scarcity, or absence of their favorite kinds of food. In the winter, the seeds of the taller weeds are their principal means of subsistence. In the summer, the seeds of the thistle and other plants and weeds are sought out by these interesting and busy gleaners. They are abundant in gardens, and as a general thing do very little harm, and a vast amount of benefit in the destruction of the seeds of troublesome weeds. As, however, they do not always discriminate between seeds that are troublesome and those that are desirable, the Goldfinches are unwelcome visitors to the farmers who seek to raise their own seeds of the lettuce, turnip, and other similar vegetables. They are also very fond of the seeds of the sunflower." (BREWSTER.)

The notes of the American Goldfinch are for the most part remarkably sweet, partaking somewhat of the nature of the *tweet* of a canary bird, but more tender; and the song is no mean performance. The latter more nearly resembles that of the Indigo Bunting than that of any other American species, but is more irregular, less harsh, and interrupted by interpolations of the ordinary call-notes.

The following interesting notes on the nest and eggs of the American Goldfinch were kindly prepared for this work, at my request, by Mr. Hugh M. Smith, of Washington, D. C.:

"Each of eleven nests in my collection, from Virginia, is similar to the others in structure, being composed of thin strips of grape-vine bark and weed fibre, fine grass, catkins, and thread, with a few leaves occasionally worked in; these are very neatly and compactly woven together. The interior is lined with thistle-down and sometimes a few feathers. The nest is cup-shaped; but inasmuch as the situation of the nest in a tree or shrub is variable, the shape, depending more or less on its resting place, is consequently somewhat modified. Some nests—probably the greatest number—are lodged in the upright crotch of a tree; some are pendant between two forking limbs; while others are saddled on a horizontal bough.

Orchards appear to be the favorite breeding localities of the Goldfinches. Young trees are preferred to old ones, the foliage of the former being denser, and offering greater concealment to the nest. The average size of a number of nests is three inches in diameter by one and a quarter inches in depth.

"The peculiar feature connected with the nidification of the Goldfinch is the late date at which the nests are constructed and the eggs deposited. The earliest date at which the eggs accompanying the above-mentioned nests were taken, was July 27, the latest August 31, the eggs in both instances being newly laid, and probably the full set. As late as the first week in September I have seen nests with incomplete sets. It was impossible to ascertain with accuracy when the nests were built, but the time can be surmised from the dates given for the eggs. For three successive years the nests and eggs of the Goldfinch were systematically searched for in the same neighborhood; no full nests, however, were ever found prior to the 27th of July, as above stated. This may meet the objection that might be made, that had the eggs been sought for, they would probably have been discovered sooner. From three to six eggs are laid; four or five is the usual number. They are bluish white, with a delicate rosy tinge when fresh."

***Spinus pinus* (Wils.)**

PINE SISKIN.

Popular synonyms. Pine Linnet; Pine Goldfinch.

The Pine Goldfinch, or Pine Siskin, inhabits during summer the northern coniferous forests, but in winter visits the milder climates of the United States, its migration extending to the northern districts of the Gulf States, if not to the shores of the Gulf itself. Its appearance in a given locality is irregular and uncertain, to about the same degree as that of the Purple Finch. In spring, large flocks may be seen feeding upon the tender buds of apple, elm, and other trees, either alone or in company with the Purple Finch.

The nest of the Pine Goldfinch, as observed at Sing Sing, New York, is thus described by Dr. A. K. Fisher, in the "Nuttall Bulletin" for July, 1888, pp. 180, 181:

"On May 25 I secured the nest. It was situated about two feet from the top of the tree, and about twenty-four from the ground. It contained four nearly fresh eggs. The nest proper, or outside part, is a frail affair, the lining making up the bulk of the nest. The outer part is made up of fine twigs from the Norway spruce, loosely placed together, a few rootlets and pieces of string being interwoven. The lining is very compact, made up of hemp-like material, horse-hairs, bits of thread, feathers, rootlets, and like substances. The nest measures eight centimeters in breadth by five centimeters in depth. The ground work of the eggs is of a light blue-green, the spots, which are numerous and somewhat confluent on the larger end, are of a light brown-lilac color. A few large and solitary spots of dark brown are dispersed sparingly over the greater part of the egg, diminishing in size towards the smaller end. One egg was unfortunately broken; the others measure as follows: $12\frac{1}{2} \times 16$ mm. $12\frac{1}{2} \times 16\frac{1}{2}$ mm, 12×17 mm."

GENUS **PLECTROPHENAX** STEJNEGER.

Plectrophanes KAUF. Entw. Eur. Thierw. 1829, 138 (neo MEYER, 1815). Type, *Emberiza nivalis* LINN.

Plectrophenax STEJN. Proc. U. S. Nat. Mus. v, 1882, 33. Same type.

GEN. CHAR. Bill conical; the lower mandible higher than the upper, the sides of both mandibles guarded by a closely applied brush of stiffened bristly feathers directed forwards, and on the upper jaw concealing the nostrils; the outlines of the bill nearly straight or slightly curved; the lower jaw considerably broader at the base than the upper, and wider than the gonys is long. Tarsi considerably longer than the middle toe; the lateral toes nearly equal (the inner claw largest), and reaching to the base of the middle claw. The hinder claw very long, moderately curved and acute, considerably longer than its toe; the toe and claw together reaching to the middle of the middle claw, or beyond its tip. Wings very long and much pointed, reaching nearly to the end of the tail; the first quill longest; the others rapidly graduated; the tertiaries a little longer than the secondaries. Tail moderate, about two thirds as long as the wings; nearly even, or slightly emarginated.

The two known species of this genus are essentially boreal, one of them, so far as known, being confined to the vicinity of Bering Sea, while the other is quite circumpolar. They are ground birds, collecting in large flocks, in autumn and winter, on tundra and plains, one of the species passing far to the southward. The recently discovered *P. hyperboreus*,* is distinguished by its much whiter coloration, only the tips of the quill-feathers and small spots near the end of the middle tail-feathers being black in the adult male.

***Plectrophenax nivalis* (Linn.)**

SNOWFLAKE

Popular synonyms. White Snowbird; Snow Bunting.

Emberiza nivalis LINN. S. N. ed. 10, 1, 1766, 176; ed. 12, 1, 1766 308.—WILS. Am. Orn. iii, 1811, 66, pl. 21, fig. 2.—NUTT. Man. 1, 1832, 458.—AUD. Orn. Biog. ii, 1834, 515; v. 494, pl. 189.

Plectrophanes nivalis MEYER.—AUD. Synop. 1839, 99; B. Am. iii, 1841, 55, pl. 155.—BAIRD, B. N. Am. 1858, 432; Cat. N. Am. B. 1879, No. 325.—COWAN, Key, 1872, 128; Check List, 1873, No. 152; 3d ed. 1892, No. 219; B. N. W. 1874, 112.—B. B. & E. Hist. N. Am. B. 1, 1874, 512, pl. 24, fig. 2.—RIDGW. Nom. N. Am. B. 1881, No. 124.

Plectrophenax nivalis STERN. Proc. U. S. Nat. Mus. 1892, 22.

HAB. Northern North America, south in winter, to northern United States (very irregularly beyond 40°, but quoted from Georgia, District of Columbia, Kentucky, Kansas, etc.). Also found throughout the arctic and subarctic portions of the Old World.

SP. CHAR. Male. Colors, in spring plumage, entirely black and white. Middle of back between scapulars, terminal half of primaries and tertiaries, and two innermost tail-feathers, black; elsewhere pure white. Legs black at all seasons. In winter dress, white beneath; the head and rump yellowish brown, as also some blotches on the side of the breast; middle of back brown, streaked with black; white on wings and tail much more restricted. Length about 6.75; wings, 4.35; tail, 3.65; first quill longest. **Female.** Spring,

"An abundant winter resident. Arrives in flocks, the first of November, and remains until about the middle of March. The 5th of March, 1875, I saw a flock of these birds in a tree in Chicago. The males were chanting a very low and somewhat broken, but very pleasant, song, bearing considerable resemblance to that of *Spizella monticola*. This and the following species, [*Calcarius lapponicus*], as well as other winter residents, appear a week or more earlier in the fall, and depart later in the spring, in the vicinity of the lake, than in any other parts of the State in the same latitude."

The Snow Bunting breeds throughout the Arctic regions of both continents, the National Museum possessing nests from the most northern point of Alaska (Point Barrow) and from Labrador, as well as from various intermediate localities.

GENUS *CALCARIUS* BECHSTEIN.

Calcarius BECHST. Orn. Tasch. Deutsch. 1803, 130. Type, *Fringilla lapponica* LINN.

GEN. CHAR. Bill small, the gonys very short, with its angle opposite the middle of the culmen; maxilla equal to or exceeding the mandible in depth, the depth of the bill not exceeding the length of the gonys. Middle toe, with claw, shorter than tarsus, the middle claw falling short of that of the hallux. Tail longer than the distance from the carpal joint to the tips of the tertials (except in *C. ornatus*).

The three species of this genus differ considerably in the details of form, but it is probable that these differences are of no more than specific value. Thus *C. ornatus* differs from both *C. pictus* and *C. lapponicus* in having the tail much shorter than the distance from the carpal joint of the wing to the end of the tertials, in which respect it agrees with *Rhynchophanes mccownii*, but this is apparently owing more to the greater development of the secondaries than to a really reduced length of the tail. In the form of the bill, however, it agrees very closely with *C. pictus*, which, as does also that of *C. ornatus*, differs from that of *C. lapponicus* in being more slender and pointed.

The species may be distinguished by the following characters:

COMMON CHARACTERS. Above brown, spotted with black. Male with the crown and other parts of the head black.

A. Outer tail-feathers dusky at the base.

1. *C. lapponicus*. Lower parts dull whitish. *Adult male in summer*: Head and jugulum black, with a broad white supra-auricular stripe; nape bright chestnut-rufous; lesser wing-coverts grayish; middle coverts dusky. *In winter*: Similar, but throat whitish, jugular patch badly defined, head much tinged with ochraceous, and rufous of nape obscured by grayish. *Adult female in summer*: Head mostly dull buffy, the crown with two broad lateral stripes of broad dusky streaks, the

... in large flocks, in autumn and winter, plains, one of the species passing far to the south recently discovered *P. hyperboreus*,* is distinguished by coloration, only the tips of the quill-feathers and the end of the middle tail-feathers being black in t

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SNOWFLAKE.

Popular synonyms. White Snowbird; Snow Bunting.

Emberiza nivalis LINN. S. N. ed. 10, 1, 1758, 176; ed. 12, 1, 1766 308.—WILS. 86, pl. 21, fig. 2.—NUTT. Man. 1, 1832, 458.—AUD. Orn. Biog. ii, 1834, 515; *Plectrophanes nivalis* MEYER.—AUD. Synop. 1839, 99; B. Am. iii, 1841, 1; B. N. Am. 1858, 432; Cat. N. Am. B. 1859, No. 325.—COUES, Key, 1872, 1873, No. 152; 2d ed. 1882, No. 219; B. N. W. 1874, 118.—B. B. & R. Hist. 512, pl. 24, fig. 2.—RIDGW. Nom. N. Am. B. 1881, No. 186.
Plectrophenax nivalis STERN. Proc. U. S. Nat. Mus. 1882, 33.

HAB. Northern North America, south in winter, to northern Unit irregularly beyond 40°, but quoted from Georgia, District of Columbia, Kei etc.). Also found throughout the arctic and subarctic portions of the Old

"SP. CHAR. Male. Colors, in spring plumage, entirely black and w back between scapulars, terminal half of primaries and tertiaries, and two feathers, black; elsewhere pure white. Legs black at all seasons. In wir beneath; the head and rump yellowish brown, as. also some blotches on breast; middle of back brown, streaked with black; white on wings and restricted. Length about 6.75; wings, 4.35; tail, 3.65; first quill longest. *F* continuous white beneath only; above entirely streaked, the feathers h centres and whitish edges; the black streaks predominate on the b *Young.* Light gray above, with obsolete dusky streaks on the back; thro paler gray,—the latter with obsolete streaks; rest of lower parts dull coverts, secondaries and tail-feathers broadly edged with light ochr (*Hist. N. Am. B.*)

Although the "White Snowbird" or "Snowflake" is s abundant winter resident of the northern portion of the so very rare in the more southern districts that th- there but a single spec-

BIRDS OF ILLINOIS.

Head with a dusky bar; a dusky patch on each side of throat and in-
on the jugulum; nape faintly rufous, streaked with black. *In win-*
but more suffused with brownish. *Young:* Head, neck, jugulum,
dusky; brownish fulvous, streaked with black; crown and wings strongly
fous.

er parts deep buff. *Adult male in summer:* Head black, with lores,
overs, a maxillary and a supra-audicular stripe, white; throat, nape,
er parts deep buff; lesser wing-coverts black, with the last row
for. The wing and lower parts similar, but the head without well-
and the white replaced by buff. *Adult female:* Similar to male in
age, but jugulum streaked with dusky, and lesser wing-coverts

feathers white.

outer tail-feathers white to the extreme base, and third with base
Nape chestnut-rufous; belly black. *In summer:* Top of
and belly deep black, the latter sometimes tinged with rufous;
deep chestnut-rufous; all markings sharply contrasted. *In winter:*
streaked with black and fulvous, the rufous of nape and black of lower
and nearly concealed by light grayish fulvous tips of feathers.

Entirely light dull buff, the upper parts broadly, and sometimes
erely, streaked with dusky. *Young.* Above blackish, the feathers
dull whitish; wings dull brownish fulvous; throat white, faintly
dusky, rest of lower part pale dull buff, the breast streaked with

Calcarius lapponicus (Linn.)

LAPLAND LONGSPUR.

Brown Snowbird.

"Autumnal specimens, of both sexes, differ in having the pattern of coloration obscured by ochraceous borders to the feathers, and a general rusty cast to the plumage." (*Hist. N. Am. B.*)

This species occurs throughout the State in winter. During severe weather I have seen large flocks at Mount Carmel, flitting in a restless manner over the snow, uttering all the while a peculiar rattling chirrup; and on other occasions, I have observed individuals mixed in with flocks of Shore Larks.

The Lapland Longspur, like the Snow Bunting, breeds in the arctic regions of both continents. The male is said to be a sweet songster, often singing while on the wing.

***Calcarius pictus* (Swains.)**

SMITH'S LONGSPUR.

Popular synonyms. Painted Longspur; Smith's Bunting.

Emberiza (Plectrophanes) picta Sw. & Rich. F. B. A. ii, 1831, 250, pl. 49.

Emberiza picta Aud. Orn. Biog. v, 1839, 91, pl. 400.

Plectrophanes pictus Bp. 1838.—Aud. Synop, 1839, 99; B. Am. iii, 1841, 52, pl. 153.—Baird,

B. N. Am. 1858, 434; Cat. N. Am. B. 1859, No. 327.—Coues, Key, 1872, 134; Check List,

1873, No. 134; B. N. W. 1874, 121.—B. B. & R. Hist. N. Am. B. i, 1874, 518, pl. 24, figs. 4, 5.

Centrophanes pictus Cab. 1851.—Ridgw. Nom. N. Am. B. 1881, No. 188.

Calcarius pictus Stejn. Proc. U. S. Nat. Mus. 1882, 33.

Emberiza smithii Aud. B. Am. vii, 1844, 337, pl. 487.

HAB. Great interior plains of North America, breeding from the Yukon, Mackenzie River, and Slave Lake districts for an undetermined distance southward, and migrating in winter to the prairies of the Mississippi Valley and as far south as northwestern Texas.

"SP. CHAR. Male. Spring. Top and sides of head black. A line from bill over the eye, lores, lower and posterior border of the black cheeks, ears, (encircled by black), and a small patch in the nape, white. Entire under parts, and extending round neck to nape (where it bounds abruptly the black of head), buff or light cinnamon-yellow; the under tail-coverts paler; the inside of wings, white. Feathers of upper surface black, edged with yellowish gray; shoulders or lesser coverts and the greater, black; middle white, forming a conspicuous patch. Quills edged externally with white, this involving the whole outer web of outermost primary. Whole of outer and most of second tail-feathers white. Bill dusky; lower mandible and legs yellowish. Length, 5.50; wing, 3.50; tail, 2.75; bill, .45.

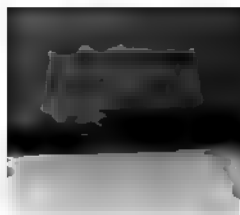
"Female. The markings of male faintly indicated, but the black and buff wanting. Head above brown, streaked centrally with paler. A narrow dark line on each side the throat, and brownish streaks across the jugulum, and along sides of body. Traces visible of the white marks of the head. Bill and feet as in the male."

"This species is quite similar in form to *P. lapponicus*, although with slenderer bill, and perhaps longer hind claw. While the colors of adult males are very different, the females have a decided resemblance; they may, however, be distinguished in all stages by

the black or dusky legs of *lapponicus* and the yellow of *pictus*, and perhaps by the more dusky upper mandibles of the latter." (*Hist. N. Am. B.*)

Like the Lapland Longspur, this species is only a winter visitor to Illinois. It is by no means so generally distributed as that species, its migrations being almost wholly confined to the open prairie districts.

"Mr. Audubon, in company with Mr. Harris and Mr. Bell, obtained specimens of these birds near Edwardsville, and described them as a new species [*Plectrophanes smithii*]. Mr. Bell states, in regard to these birds, that he found them very abundant on the low prairie near a lake, a few miles from Edwardsville. They were generally in large flocks, and when once on the ground they began to separate. They ran very nimbly, in a manner resembling that of the Grass Finch, and when they arose, which they rarely did unless they were nearly approached, they uttered a sharp click, repeated several times in quick succession, and moved with an easy undulating motion for a short distance and then alighted very suddenly, seeming to fall perpendicularly several feet to the ground. They preferred the roots where the grass was shortest. When in the air they flew in circles, to and fro, for a few minutes, and then alighted, keeping up a constant chirping or call, somewhat like that of the Red Poll." (BREWER.)



The breeding range of this species is much more restricted than that of *C. lapponicus*, being confined to the interior of Arctic America, chiefly in the basin of Mackenzie and Anderson rivers, including the region about the Great Bear and Great Slave lakes. In fact, it is emphatically a bird of the great interior valleys of the continent, between the Rocky Mountains on the one side and the Atlantic forest region on the other.

GENUS *RYNCHOPHANES* BAIRD.

Rhynchophanes BAIRD, Birds N. Am. 1858, 432. Type, *Plectrophanes mccownii* LAWR.

GEN. CHAR. Bill stout, conical, the gonys longer than the hind toe, with its angle considerably posterior to the middle of the bill. Maxilla equal to the mandible in depth; mandibular tomium forming a decided angle at the base. Middle toe, with claw, shorter than tarsus, the claw reaching beyond that of the hallux. Tail decidedly shorter than the distance from the carpal joint of the wing to the tips of the tertials.

In the form of the bill of this well-marked genus there is nothing to indicate its near affinity to the genera *Plectrophenax* and *Calcarius*; but in other parts of its organization it evidently approaches much nearer to these forms than any other. The bill is wonderfully similar to that of *Calamospiza*, the only conspicuous difference being its considerably narrower form,—particularly the mandible, as compared with the maxilla. The lateral, as well as the vertical, outlines are very nearly the same, even to the well-marked angle at the base of the mandibular tomium. In other characters, however, the two genera are so different as to warrant their assignment to distinct groups, or subfamilies.

The genus *Rhynchophanes* contains a single species, peculiar to the interior of North America.

Rhynchophanes mccownii (Lawr.)

MCCOWN'S LONGSPUR.

Popular synonym. McCown's Bunting.

Plectrophanes mccownii LAWR. ANN. LYN. N. Y. VI, 1851, 122.—BAIRD, B. N. AM. 437; CAT. N. AM. B. 1859, No. 390.—COUES, KEY, 1872, 134; CHECK LIST, 1873, No. 156; B. N. W. 1874, 124.—B. B. & R. Hist. N. AM. B. I, 1874, 533, pl. 24, fig. 1.

Rhynchophanes mccownii BAIRD.—RIDGW. NOM. N. AM. B. 1881, No. 190.

HAB. Great Plains of the United States, breeding northward (in Dakota, Wyoming, etc.) and migrating south in winter through Colorado, Kansas, Texas, New Mexico, and Arizona, to northern Mexico; occasional winter visitor to prairies of Illinois.

"SP. CHAR. *Male in spring.* Top of head, a broad stripe each side the throat from lower mandible, and a broad crescent on jugulum, black; side of head including lores and band above the eye, throat, and under parts, ashy white; ear-coverts bordered above and behind by blackish, running out at the maxillary stripe. Breast just behind the black crescent and sides, showing dark bases of feathers. Upper parts ashy, tinged with yellowish on the mandible, and streaked with dusky; least so on nape and rump. Lesser wing-coverts ashy; median, chestnut-brown, with blackish bases sometimes evident; the quills all bordered broadly externally with whitish, becoming more ashy on secondaries. Tail-feathers white except at the concealed bases and the ends, which have a transverse (not oblique) tip of blackish; the outermost white to the end; the two central like the back. Bill dark plumbeous; legs blackish. In winter, the markings more or less obscured; the bill and legs more yellowish.

"*Female* lacks the black markings, which, however, are indicated obsoletely as in other *Plectrophanes*: there is no trace of chestnut on the wings, nor the streaks on the breast. Length, 5.50; wing, 3.60; tail, 2.50; bill, .46.

"This species varies considerably in markings, but is readily recognized among other *Plectrophanes* in all stages by short hind toe, very stout bill, and the transverse dark bar at the end of all tail-feathers except the inner and outer. (*Hist. N. Am. B.*)

McCown's Longspur is one of several very peculiar birds which together characterize the avi-fauna of the Great Plains of North America, its more prominent associates in this distinction being the Lark Bunting (*Calamospiza melanocorys*), Chestnut-collared Longspur (*Calcarius ornatus*), Baird's Bunting (*Centronyx bairdii*), Clay-colored Sparrow (*Spizella pallida*), Leconte's Sparrow (*Coturniculus lecontei*), and Harris's Sparrow (*Zonotrichia querula*). These, together with the subject of the present article, and a few species not named, characterize a Campestrian Province, which, so far as its avian fauna is concerned, is even more distinct from the Middle Province than is the Pacific Province.*

McCown's Longspur is an abundant species during summer on the great plains of Dakota, Montana, and Wyoming, to the northward



SUBFAMILY PASSERINÆ.

"The introduction into the United States at so many distant points, of the European House Sparrow (*Pyrgita domestica*) renders it necessary to introduce it with any work treating of the birds of North America, although totally different in so many features from our own native forms. * * * In some respects similar to certain *Coccothraustinae*, in the short tarsi and covered nostrils, the wings are shorter and more rounded, the sides of the bill with stiff bristles, etc. The much longer, more vaulted bill, weaker feet, and covered nostrils, distinguish it from *Spizellinae*." (*Hist. N. Am. B.*)

GENUS PASSER BRISSON.

Passer BRISSON, Orn. iii, 1760, 72. Type, *Fringilla domestica* LINN.

"Gen. CHAR. Bill robust, swollen, without any distinct ridge; upper and under outlines curved; margins inflexed; palate vaulted, without any knob; nostrils covered by sparse, short, incumbent feathers; side of bill with stiff, appressed bristles. Tarsi short and stout, about equal to or shorter than the middle toes; claws short, stout, and considerably curved. Wings longer than tail; somewhat pointed. Tail nearly even, emarginated, and slightly rounded." (*Hist. N. Am. B.*)

Passer domesticus (Linn.)

EUROPEAN HOUSE-SPARROW.

Popular synonyms. English Sparrow; European Sparrow; House Sparrow.

Fringilla domestica LINN. S. N. ed. 10, i, 1758, 183; ed. 12, i, 1766, 323.

Passer domesticus SCHAEFF. Mus. Or. 1789, 24.—COUES, Key, 1872, 146; 3d ed. 1884, 344; Check List, 1873, No. 187; 2d ed. 1882, No. 192.

Pyrgita domestica CUV. RÈG. AN. 2d ed. i, 1729, 439.—B. B. & R. Hist. N. Am. B. i, 1874, 525, pl. 23, fig. 12.

HAB. Whole of Palearctic Region. Introduced into and naturalized in North America, Australia, and other countries.

"**SP. CHAR. Male.** Above chestnut-brown; the interscapular feathers streaked with black on inner webs; the top of head and nape, lower back, rump, and tail-coverts, plain ashy; narrow frontal line, lores, chin, throat, and jugulum black; rest of under parts grayish, nearly white along median region. A broad chestnut-brown stripe from behind eye, running into the chestnut of back; cheeks and sides of neck white; outside of closed wing, pale chestnut-brown, with a broad white band on the middle coverts, and behind showing the brown quills; the lesser coverts dark chestnut, like the head stripe. Tail dark brown, edged with pale chestnut. Bill black; feet reddish; iris brown.

"**Female.** Duller of color, and lacking the black of face and throat; breast and abdomen reddish ash; cheeks ashy; a yellow-ochre band above and behind the eyes, and across the wings. Head and neck above brownish ash; body above reddish ash, streaked longitudinally with black.

"**Male in winter.** The colors generally less distinct. Length, 6.00; wing, 2.85; tail, 2.50; tarsus, .70; middle toe and claw, .60.

BIRDS OF ILLINOIS.

Sparrow of Europe has been introduced into so many United States as to render it probable that at no distant date it will have become one of our most familiar species. It was introduced into the New World within a comparatively few years, and has since multiplied about the larger cities, especially in New York, as also about Portland, Boston, Newark, and Philadelphia. * * * One thousand birds were introduced into the public squares of Philadelphia in the spring of 1874. (N. Am. B., 1874.)

This unmitigated pest we have little to say, further than to regret the misfortune of its introduction, and to plead for its extermination. It is in every respect a first-class nuisance, to be reckoned with the house-rat and other noxious vermin.

SPIZELLINÆ.—THE AMERICAN SPARROWS.

The bill is usually almost straight; sometimes curved. Commissure generally straight or slightly concave. Upper mandible wider than lower. Nostrils small. Tarsus moderate, the outer primaries not much rounded. Tail variable. Feet usually longer than the middle toe.

They are usually small, and of dull color, though frequently brightly colored. Nearly all are streaked on the back and the belly. Names of the United States species here

- d.* Subgenus *Centronyx*. Tail deeply emarginate, two and a half times as long as the tarsus, the feathers narrow and attenuated, as in *Coturniculus*. Hind claw nearly or quite as long as its digit.
- e.* Subgenus *Passerculus*. Tail slightly emarginate, three times as long as the tarsus, the feathers broad and scarcely attenuate, though acute at tips. Hind claw shorter than its digit.
- Poocetes.** Tarsus longer than middle toe, with claw. Outer tail-feathers partly white.
- B.** Tail longer and broader; nearly or quite as long as, sometimes a very little longer than, the wings, which are rather lengthened. The primaries considerably longer than the secondaries. None of the species streaked beneath, when adult, and only the back and crown, or back alone, streaked above. (*Spizella*.)
- a.* Tail rounded or slightly graduated.
- Chondestes.** Tail considerably graduated. Lateral toes considerably shorter than the middle toe, without its claw. Wings very long, decidedly longer than the tail, reaching the middle of the tail. First quill longest. Head broadly striped with chestnut. Back streaked. White beneath. A white blotch on the end of the tail-feathers.
- Zonotrichia.** Tail rounded. Wings moderate, about as long as the tail, reaching about over the basal fourth of the tail; first quill less than the second to fourth. Feet large. Head striped with black and white or with brown and ochraceous. Back streaked.
- Junco.** Tail very nearly equal to the wings, slightly double-rounded. Outer toe rather longer than inner, reaching the middle claw. No streaks anywhere except in young; black or ash-color above; belly white; with or without a rufous back and sides. Outer tail-feathers white.
- Amphispiza.** Tail lengthened, rounded or slightly graduated; the feathers unusually broad to the end. Bill slender. Wings about as long as the tail, reaching but little beyond its external base. Tertials broad, and, with the secondaries, rather lengthened. Second to fifth quills nearly equal, and longest. Tail black. Ashy brown above; white beneath. Sides of head with stripes of black or grayish and white.
- b.* Tail decidedly forked; a little shorter than the wing, sometimes a little longer.
- Spizella.** Size rather small. Wings long. Lower mandible largest. Uniform beneath, or with a pectoral spot or the chin black.
- C.** Tail lengthened and graduated; decidedly longer than the wings, which are very short, scarcely extending beyond the external base of the tail. Feet reaching but little beyond the middle of the tail. Species all streaked above; streaked or nearly unicolor beneath. No white on wings or tail. Outer lateral toe the longer. First quill not the shortest of the primaries. (*Melospiza*.)
- Melospiza.** Culmen and commissure nearly straight. Claws stout; hinder one as large as its digit. Tail-feathers rather broad. Body streaked beneath (except in *M. georgiana*).
- Peucaea.** Culmen and commissure curved. Claws weak; hinder one not much curved, decidedly shorter than its digit. Tail-feathers narrow. Without streaks beneath, excepting a narrow submaxillary stripe.
- D.** Tail rather short, and much graduated; longer than the wings; the midrib more median. Culmen curved. Tarsus considerably longer than middle toe. Outer toe longer. But little difference in the length of the quills; the outer ones much rounded; even the second quill is shorter than any other primary except the first. (*Embernagra*.)
- Embernagra.** Color, plain olive-green above.

GENUS **AMMODRAMUS** SWAINSON.SUBGENUS **Ammodramus**.

Ammodramus SWAINSON, Zool. Jour. III, 1827, 348. Type, *Oriolus caudacutus* Gmel.

"GEN. CHAR. Bill very long, slender, and attenuated, considerably curved towards the tip above. The gonys straight. A decided lobe in middle of cutting edge of upper bill. The legs and toes are very long and reach considerably beyond the tip of the short tail. The tarsus is about equal to the elongated middle toe; the lateral toes equal, their claws falling considerably short of the base of the middle one; the hind claw equal to the lateral one. Wings short, reaching only to the base of the tail; much rounded; the secondaries and tertials equal, and not much shorter than the primaries. The tail is rather shorter than the wings, and graduated laterally; each feather stiffened, lanceolate, and acute.

"Color. Streaked above and across the breast; very faintly on the sides.

"The essential characters consist in the slender and elongated bill; the long legs reaching considerably beyond the tail, with the lateral claws falling considerably short of the middle one; and the very short rounded wings, rather longer than the cuneate tail, with its stiffened and lanceolate feathers." (*Hist. N. Am. B.*)

Only one of the three known species of this genus has been taken in Illinois. In view, however, of the possible occurrence of a second (*A. maritimus*), its characters, together with those of the other, are given in the following synopsis:

COMMON CHARACTERS. Above olivaceous or ashy, the crown washed with brown laterally, the dorsal feathers darker centrally; beneath white, tinged across the jugulum with ochraceous or ashy; jugulum streaked; a dusky "bridle" on each side of the throat, above it a malar stripe of ochraceous or white.

1. *A. caudacutus*. *Adult*. Above mixed olive, gray, and brown; the outer webs of back feathers edged with olivish gray or whitish, and often with darker streaks; crown usually with a brown suffusion, and streaked with black laterally. Super-

Ammodramus caudacutus nelsoni* (Allen).*NELSON'S SPARROW.**

Popular synonym. Nelson's Sharp-tailed Finch.

Ammodromus caudacutus var. *nelsoni* ALLEN, Proc. Boston Soc. xvii, March, 1875, 93.—

NELSON, Bull. Essex Inst. viii, 1876, 107, 152; Bull. Nutt. Orn. Club, July, 1876, 40.

Ammodromus caudacutus nelsoni RIDGW. Nom. N. Am. B. 1881, No. 201a.—COUES, 2d Check List, 1882, No. 241; 2d Key, 1884, 368.

HAB. Mississippi Valley (Calumet marshes, and vicinity of Warsaw, Illinois; eastern Kansas, etc.); salt marshes of Atlantic coast during migrations.

SP. CHAR. *Adult.* Pileum bluish gray or olive-gray medially, umber-brown laterally, the lateral stripes more or less streaked with black. A broad superciliary stripe deep ochraceous, connected behind the auriculars with a broad maxillary stripe of the same color. Auriculars grayish, with a dusky line along upper edge, connecting with a distinct black streak beneath hinder part of the ochraceous superciliary stripe. Scapulars and interscapulars bright olive-brown, the outer webs broadly edged with grayish white, separated from the brown by a blackish line. Tertials dusky, bordered with rusty whitish or pale rusty. Rump uniform olive-brown. Rectrices light raw-umber-brown, darker along shafts. Chin, throat, breast, sides, flanks, and crissum ochraceous, the jugulum, breast, sides, and flanks streaked with dusky. Wing, 2.20-2.30; tail, 1.95-2.10.

This inland race differs from the coast form principally in its somewhat smaller size (the bill especially) and brighter coloration, the colors being richer and the markings more sharply contrasted.

So little is known either of its habits or distribution, that all the information we have to offer is the following, from Mr. Nelson's list of the birds of northwestern Illinois. (*Bull. Essex Inst.*, Vol. VIII., 1876, p. 107):

"First obtained September 17, 1874, in the Calumet Marsh, where it was abundant at the time. The 12th of June, 1875, I saw several of these birds in the dense grass bordering Calumet Lake, where they were undoubtedly breeding. The 1st of October, 1875, I again found them abundant on the Calumet Marsh, and also found them numerous in the wild rice bordering Grass Lake, Lake county, Illinois, the 10th of November the same year. Prof. S. A. Forbes has taken them on the Illinois River during the migrations, and Dr. Hoy has obtained a single specimen at Racine. From the numbers which visit us in the fall, they must breed in abundance north of this State. They are difficult to obtain, as they take refuge in the dense marsh grass upon the first alarm. Occasionally one mounts a tall reed and utters a short, unmusical song, slightly resembling that of the Swamp Sparrow (*M. palustris*)."

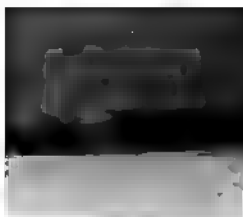
SUBGENUS *Coturniculus* BONAPARTE.

Coturniculus BONAP. Geog. and Comp. List, 1838, 32. Type, *Fringilla passerina* WILS.

GEN. CHAR. Bill very large and stout (except in *C. lecontei*); the under mandible broader, but lower than the upper, which is decidedly convex at the basal portion of its upper outline. Legs moderate, apparently not reaching to the end of the tail. The tarsus appreciably longer than the middle toe; the lateral toes equal, and with their claws falling decidedly short of the middle claw; the hind toe intermediate between the two. The wings are short and rounded, reaching to the base of the tail; the tertiarials almost as long as the primaries, not much difference in length in the primaries, although the outer three or four are slightly graduated. The tail is short and narrow, shorter than the wing except in *C. lecontei*, graduated laterally, but slightly emarginate; the feathers all lanceolate and acute, but not stiffened, as in *Ammodramus*.

"This genus agrees with *Passerculus* in the short and narrow tail. The wings are much shorter, and more rounded; the feet shorter, especially the middle toe, which is not as long as the tarsus. The tail feathers are more lanceolate. The bill is much longer, and more swollen at the base.

"The essential characters * * * consist in the swollen convex bill; the short toes, compared with the tarsus; the short and rounded wings; and the very small, narrow, slightly graduated tail, with its lanceolate, acute feathers (except in the South American *C. lecontei*).



By coloration, they may be distinguished as follows:

COMMON CHARACTERS. Crown and back streaked with black upon an ashy, olive, or chestnut ground; beneath whitish, tinged across the breast with ochraceous or ashy, plain, or with blackish streaks on the breast. A light superciliary stripe.

A. A dusky streak on each side of the light malar stripe.

1. *C. hammondi*. Bill very robust, .28-.32 from nostril and .25-.28 deep at base. *Adult*: Head grayish ochraceous, lighter beneath; a stripe of black streaks on each side of the crown; also a post-auricular black streak, and a less distinct black streak on each side of the lighter malar stripe; breast streaked with black.

B. No dusky streak on either side of light malar stripe.

2. *C. leucotis*. Bill very narrow (much as in *Ammodramus caudacutus*), .25-.30 from nostril and .20 deep at base. *Adult*: Head fine buff, the auriculars, lorea, and posterior two thirds of the middle stripe on the crown, grayish white; a black stripe on each side of crown; sides (but not breast) streaked with black. *Young*: above ochraceous, with broad streaks of black on the back; medial stripe of crown entirely buff; beneath white, the jugulum buffy, narrowly streaked with dusky.
3. *C. passerinus*. Bill robust, .28-.32 from nostril, and .25-.30 deep. *Adult*: Head, throat, jugulum, and sides ochraceous buff; edge of wing gamboge-yellow; a yellow spot above the lore; no streaks on jugulum on sides. Crown chestnut-brown or black, divided by a medial, narrower stripe of buff or pale gray. *Young*: Superciliary and middle crown stripes pale grayish; beneath pale buffy; the jugulum streaked with dusky; no distinct yellow on lore or edge of wing.

Ammodramus savannarum passerinus (Wils.)

GRASSHOPPER SPARROW.

Popular synonyms. Yellow-winged Sparrow; Grass-bird; Ground-bird; Grasshopper-bird.

Fringilla passerina WILS. Am. Orn. iii, 1811, 76, pl. 26, fig. 5.—AUD. Orn. Biog. ii, 1834, 180; v, 1839, 497, pl. 130.

Emberiza passerina AUD. Synop. 1839, 103; B. Am. iii, 1842, 73, pl. 162.

Coturniculus passerinus BONAP. 1838.—BAIRD, B. N. Am. 1858, 450; Cat. N. Am. B. 1859, No. 338.—COUES, Key, 1873, 137; Check List, 1873, No. 162; 2d ed. 1882, No. 234; B. N. W. 1874, 131.—B. B. & R. Hist. N. Am. B. i, 1874, 553, pl. 25, fig. 4.—RIDGW. Nom. N. Am. B. 1881, No. 198.

Fringilla savannarum GMEL.—NUTT. Man. i, 1832, 494; 2d ed. i, 1840, 570.

HAB. Eastern United States, breeding throughout, but wintering in Southern States, Cuba, Porto Rico, eastern Mexico, and south to Costa Rica.

"SP. CHAB. Feathers of the upper parts brownish rufous or chestnut-brown, margined narrowly and abruptly with ash-color; reddest on the lower part of the back and rump; the feathers all abruptly black in the central portion; this color visible on the interscapular region, where the rufous is more restricted. Crown blackish, with a central and superciliary stripe of yellowish tinged with brown, brightest in front of the eye. Bend of the wing bright yellow, lesser coverts tinged with greenish yellow. Quills and tail-feathers edged with whitish; tertiaries much variegated. Lower parts brownish yellow or buff, nearly white on the middle of the belly, darkest on the jugulum. The feathers of the upper breast and sides of the body with obsoletely darker centres, these sometimes wanting. Sides of breast against bend of wing with a few black streaks, usually concealed. Length about 5 inches; wing, 2.40; tail, 2.00.

"The young of this species has the jugulum and sides of the breast streaked with black, much more distinct than in the adult,

and exhibits a slight resemblance to *C. henalowi*. The upper parts are less varied.

"Specimens from the Far West have the bill more slender, the rufous of the back moderately paler, the dark markings of the back restricted, the light stripe on the head with scarcely any yellow, a tawny spot in front of the eye quite yellow, and little or no rufousness in the breast.

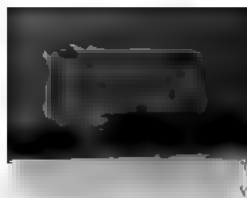
"The young bird, with streaked jugulum, may be most readily distinguished from *C. henalowi* by the grayer plumage without any shade of chestnut or greenish yellow, the sparseness of streaks on the side, the absence of the two mandibular dusky stripes, and the broad dusky centres of the middle tail-feathers." (*Hist. N. Am. B.*)

This little bird is abundant in all cultivated portions of the State, as well as on the open prairie. To the rural population it is known as the "Grass-bird," "Ground-bird," or "Grasshopper-bird," the latter appellation being derived from its grasshopper-like song, which it utters from the end of a fence-stake, the top of a tall weed-stalk, or as it sits upon the summit of a haycock in the meadow. The greater portion of its time is passed in the grass, in which it runs from the intruder, unseen, like a mouse; or, if pressed too closely, rises suddenly and flies a greater or less distance in a zigzag manner, exceedingly provoking to the collector, who finds it a difficult mark to hit.

***Ammodramus henalowi* (Aud.)**

HENSLOW'S SPARROW.





Under parts light brownish yellow, paler on the throat and abdomen. The jugulum, upper part of the breast, and the sides of the body conspicuously streaked with black. Edge of wing yellow. A strong tinge of pale chestnut on the wings and tail. The median tail-feathers and upper coverts chestnut or rufous brown, with sharply defined shaft-streaks of black. Length, 5.25; wing, 2.15; tail, 2.15." (*Hist. N. Am. B.*)

This species is related to *C. passerinus*, but readily distinguished by the well-marked streaks on breast and sides, the greenish yellow, not chestnut-brown, of head and nape, and the two mandibular dusky stripes. The middle tail-feathers are reddish with only a very narrow sharply defined median shaft-streak of black, instead of having the greater portion of the centre dusky with scalloped edges.

Henslow's Sparrow is an exceedingly common or even abundant species in Illinois, but is much more local than its relative, the Yellow-winged Sparrow. The writer first met with it on Fox Prairie, Richland county, in June, 1871, having his attention attracted to it by its peculiar note. It was very abundant, the males being perched on tall weed-stalks, uttering incessantly their rude and feeble, but emphatic "song" sounding like *pillut*, or *se'wick*, the head being thrown back and the tail inclining forward underneath the bird, in the manner of *C. passerinus*. Twelve years later it was exceedingly numerous on the small remaining patch of open prairie (160 acres in extent) in the same locality, and also in a similar bit of prairie of equal extent which marked the last vestige of the once extensive but since populous and well-cultivated Sugar Creek Prairie, several miles to the southwest.

These birds lie very close, allowing themselves to be almost trodden on before flying; and, notwithstanding a very large number of females were shot which had evidently been startled from their nests, only one nest could be found. They had probably run some distance through the grass before flying, thus rendering search fruitless.

Mr. Nelson states that in Cook county it is a rather common resident on the prairies, arriving May 12 to 20, and leaving the first of September. In Richland county the writer found it exceedingly numerous during the latter part of October, 1882, in company with smaller numbers of *C. lecontei*, inhabiting the dead grass in the damper portions of the meadows. Mr. H. K. Coale writes me that he found it to be a common summer resident in a certain piece of wet prairie overgrown with bushes at Toleston, Lake county, Indiana.

During the summer of 1897, the writer found this species to be very common in Paxton county, Kansas, about five miles from Hutchinson. While along the road at this place, a few sparrows having already made their appearance, he was surprised to hear the peculiar note which he had last heard on Fox Prairie, eight years previously. Soon numbers were heard on every hand, the locality being a rather narrow valley between low hills, the lower ground being nearly level, meadow-land. Returning a few days after with a friend, several of the birds were secured. A nest found in this vicinity the following summer is thus described by Mr. P. L. Jory, of Hutchinson, in the "Nuttall Bulletin" for January, 1898, pp. 57, 58.

Nest rather rude and irregularly shaped, composed externally of coarse grass, lined with exceedingly fine grass-tops circularly disposed and well finished, but without any horse-hair; no other material than grass was used in its construction. The nest is about four inches in diameter, about two inches in height, and two inches inside diameter, it was placed in the centre of a large clump of wild clover (*Trifolium agrarium*), and rested directly on the ground without any appearance of a cavity. The clover had grown up about a foot or more in height and completely surrounded the nest, which was only discovered by parting it. The female was secured as she flew from the nest. The eggs, four in number, are much blotched and speckled all over with a mixture of madder-brown and sepia, the color becoming more confluent on the larger end; there are also a few dashes and dots of very dark sepia, almost black.

and heard singing at Ball's Cross Roads, in Virginia, about two miles nearer the District than the other locality. Besides the characteristic note of *see-wick*, they have quite a song, which may fairly be represented by the syllables *sis-r-r-rit-srit-srit*, with the accent on the first and last parts. This song is often uttered while the bird takes a short flight upward; it then drops down again into the tangled weeds and grasses, where it is almost impossible to follow it."

Ammodramus lecontei (Aud.)

LECONTE'S SPARROW.

Popular synonyms. Leconte's Bunting; Yellow Sparrow (Manitoba).

Emberiza lecontei AUD. B. Am. viii, 1843, 338. pl. 488.

Coturniculus lecontei BP. 1850.—BAIRD, B. N. Am. 1858 481; Cat. N. Am. B. 1859, No. 346.—

COUES, Key, 1872, 137; Check List, 1873, No. 164; 2d ed. 1882, No. 237.—B. N. W. 1874, 135.—B. & R. Hist. N. Am. B. i, 1874, 552, pl. 25, fig. 6.—RIDGW. Nom. N. Am. B. 1881, No. 200.

HAB. Eastern portion of the Great Plains of the United States, from Manitoba (in summer) to central Texas (in winter). In winter migrating through the prairie districts of the Mississippi Valley to South Carolina, Alabama, and Florida.

SP. CHAR. Bill much more slender than *C. henslowi*. First quill longest, the rest diminished rapidly. Tail emarginate and rounded, with the feathers acute. Upper parts light yellowish red, streaked with brownish black; the margins of the feathers and scapulars pale yellowish white. Tail-feathers dusky, margined with light yellowish. Lower parts, with the cheeks and a broad band over the eyes, fine buff. Medial line yellowish anteriorly, nearly white behind. The buff extending to the femorals and along the sides, streaked with brownish black. Throat, neck, and upper parts of the breast, without any streaks, and plain buff.

Adult male (No. 65,815, U. S. Nat. Mus.). Ground-color of the head white, tinged with buff on the maxille, and with ash on the auriculars; crown with two broad black stripes, separated by a narrow medial one of whitish; nuchal feathers bright rufous, edged with ashy white, and shafted with black; dorsal feathers black, broadly edged exteriorly with white, and interiorly narrowly skirted with rufous. Beneath entirely white, tinged on the throat with buff, and streaked on the sides—from the breast to the flanks—with black. Length, 5.00; extent, 7.10; wing, 2.10; tail, 2.00; culmen, .42; tarsus, .68. (August 19; plumage much worn and faded.)

Adult female (No. 65,814, U. S. Nat. Mus.). Resembling the male, but, being in less abraded plumage, the colors more pronounced. The band is deep buff (just as in *Ammodramus caudacutus*), the auriculars and lores distinctly grayish white, and the medial stripe of the crown ashy white, except the anterior third, which is buff. On the lower parts, the whole lower side of the head, and the entire breast, sides, flanks, and tibia, are deep buff, the sides sharply streaked with black. The abdomen, anal region and crissum are pure white, in marked contrast. Length, 5.00; extent, 7.00; wing, 2.00; tail, 2.10; culmen, .45; tarsus, .70.

Young. Ground-color above dull buff, below white; the pattern of the old birds seen in the markings, which, however, are pure black, all reddish and brown tints being absent—except on the wings and tail, which are nearly as in the adult.

In its unspotted breast, the rufous feathers of the hind-neck, the absence of submalar stripes, and apparently in the markings of the wings, it is most like *C. passerinus*. Although the middle tail-feathers

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ow stripe of *C. henslowi*, the bill is much smaller, as above, than in the others, and is distinctly bluish. The throat is deep buff anteriorly, instead of buff throughout. The superciliary stripe is continuously buff, instead of white to, and ashy behind, the eye. In the comparative size and tail, it is most nearly related to *henslowi*, but the tail is much narrower than in either.

The little sparrow is, in some localities at least, an abundant species in Illinois. In the latter part of October, 1882, I found it in the meadows on Sugar Creek Prairie, Richland county, where it was with *C. henslowi*, but preferring the rank grass near the water. It resembled the latter species in its actions, being difficult to shoot and flying in a very zigzag manner, but was readily distinguished by its more slender build and conspicuously lighter or paler coloration. But few specimens have as yet been obtained in the northeastern portion of the State. Mr. Nelson, in his report on the birds of Illinois, mentions it as follows:

"It is a very abundant species. I obtained a fine specimen May 18, 1875, at Chicago, and by my notes I see that a second specimen was obtained the 21st of the same month near where the first was obtained. The specimen in my possession was flushed from a small prairie near the Calumet river, where the moisture is abundant."

claws falling far short of the middle one. Hind toe much longer than the lateral ones, reaching as far as the middle of the middle claw; its claws moderately curved. Wings unusually long, reaching to the middle of the tail, and almost to the end of the upper coverts. The tertials nearly or quite as long as the primaries; the first primary longest. The tail is quite short, considerably shorter than the wings; as long as from the carpal joint to the end of the secondaries. It is emarginate, and slightly rounded; the feathers pointed and narrow." (*Hist. N. Am. B.*)

The essential characters of this genus lie in the elongated wings (longer than the tail), the tertials equal to the primaries, the first quill almost longest. The legs are long, the outstretched toes reaching to the end of the tail; the lateral toes considerable shorter than the middle, which is not much longer than the hinder. The tail is short, narrow, and emarginate; the feathers acute.

***Ammodramus sandwichensis savanna* (Wils.)**

SAVANNA SPARROW.

Popular synonyms. Grass Bird; Ground Bird.

Fringilla savanna WILS. *Am. Orn.* iii, 1811, 55, pl. 22, fig. 2; iv, 1811, 72, pl. 34, fig. 4.—NUTT. *Man.* i, 1832, 439.—AUD. *Orn. Biog.* ii, 1834, 63; v, 1839, 516, pl. 109.

Emberiza savanna BP. 1838.—BAIRD, *B. N. Am.* 1858, 442; *Cat. N. Am. B.* 1859, No. 332.—COUES, *Key*, 1872, 135; *Check List* 1873, No. 159; *B. N. W.* 1874, 127.—*B. B. & R. Hist. N. Am. B.* i, 1874, 534, pl. 24, fig. 8.

Passerculus sandwichensis savanna RIDGW. *Nom. N. Am. B.* 1881, No. 193 *a.*—COUES, *2d Check List*, 1882, No. 227.

HAB. Eastern North America, breeding chiefly north of, and wintering south of, the parallel of 40°; Cuba. (The typical race of this species inhabits the north Pacific coast, from Vancouver Island to Unlashka. It is similar in colors to *savanna*, but is decidedly larger. In other parts of western North America, including Alaska, with the exception of the coast district, the smaller, paler, and more slender-billed *P. sandwichensis alaudinus* replaces both the other forms.)

"SP. CHAR. Feathers of the upper parts generally with a central streak of blackish brown; the feathers of the back with a slight rufous suffusion laterally; the feathers edged with gray, which is lightest on the scapulars, and forms there two gray stripes. Crown with a broad median stripe of yellowish gray. A superciliary stripe from the bill to the back of the head, eyelids and edge of the elbow, yellow, paler behind. A yellowish white mandibular stripe curving behind the ear-coverts, and margined above and below by brown. The lower margin is a series of thickly crowded spots on the sides of the throat, which are also found on the sides of the neck, across the upper part of the breast and on the sides of the body; a dusky line back of the eye, making three on the side of the head (including the two mandibular). A few faint spots on the throat and chin. Rest

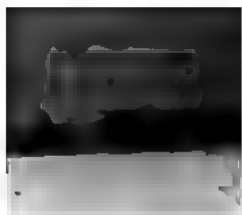
of under parts white. Length, 1.34; wing, 2.24; tail, 2.14. Young. Ground-color of the upper parts (except wings and tail) light ochraceous, more brownish on top of head, upper part of back and on upper tail-coverts, the streaks blacker and more conspicuous than in the adult. Beneath with an ochraceous tinge anteriorly, the streaks broader and deeper black than in the adult, though less sharply defined. The infra-maxillary streak expanded into a broad, blackish elongated blotch." (*Ibid.* N. Am. B.)

The Savanna Sparrow is one of those inconspicuous little birds which hide in the grass or run stealthily along the fences or furrows, having nothing special in their appearance or habits to attract particular attention. It is a very abundant species, at suitable seasons, throughout the eastern portions of North America, breeding in the more northern states and northward, and wintering in the more southern portions of the Union. In portions of Illinois the species is, to a greater or less extent, a permanent resident. At least, the writer has in summer taken its nest and eggs, and in midwinter shot specimens of the bird itself, at Mount Carmel. It was, however, very rare there in summer, and, except in mild seasons, by no means common in winter, being chiefly observed as a spring and fall migrant.

The general habits of the Savanna Sparrow are very similar to those of the Vesper Sparrow,—like the latter, frequenting meadows and nesting on the ground.

GENUS *POOCÆTES* BAIRD.

Poocætes BAIRD. *Birds N. Am.* 1858: 447. Type, *Fringilla pyramiden* GMEL.

**Poocæstes gramineus (Gmel.)****VESPER SPARROW.**

Popular synonyms. Bay-winged Bunting; Grass Finch.

Fringilla graminea GMEL. S. N. I, 1788, 922.—AUD. Orn. Biog. I, 1831, 473; v, 1839, 502, pl. 94.—NUTT. Man. I, 1832, 182, 482.

Emberiza graminea WILS. Am. Orn. iv, 1811, 51, pl. 31, fig. 5.—AUD. Synop. 1839, 102; B. Am. III, 1841, 65, pl. 153.

Poocæstes gramineus BAIRD, B. N. Am. 1858, 447; Cat. N. Am. B. 1859, No. 337.—COUES, Key, 1872, 136; Check List, 1873, No. 161; 2d ed. 1882, No. 232; B. N. W. 1874, 129 (*Poocætes*).—B. B. & R. Hist. N. Am. B. I, 1874, 545.—RIDGW. Nom. N. Am. B. 1881, No. 197.

HAB. Eastern United States and British Provinces, north to the Saskatchewan, in the interior; breeding chiefly north of 38° and wintering chiefly south of the same latitude, within the United States. (Replaced in the Western Provinces by *P. gramineus confinis*, distinguished by paler colors with narrower streaks, more slender bill, etc.)

SP. CHAR. Tail feathers rather acute. Above light yellowish brown; the feathers everywhere streaked abruptly with dark brown, even on the sides of the neck, which are paler. Beneath yellowish (sometimes reddish) white; on the jugulum and sides of neck and body streaked with brown. A faint light superciliary and maxillary stripe; the latter margined above and below with dark brown; the upper stripe continued around the ear-coverts, which are darker than the brown color elsewhere. Wings with the shoulder light chestnut-brown, and with two dull whitish bands along the ends of the coverts; the outer edge of the secondaries also is white. Exposed portion of outer tail-feather and edge and tip of the second, white. Length, about 6.25; wing, 3.10; tail, 2.50; bill, .33 from frontal feathers to point, by .33 in depth at base; tarsus, .72. Bill yellow, dusky above; legs yellow. (Measurements of No. 10,147, male, Washington, D. C.)

This plainly colored bird is found throughout the State, in suitable localities, as a summer resident, and an occasional winter resident in the southern portion. Except in the more northern counties, however, it is abundant only during the migrations, the majority of them passing to the northward to breed. It inhabits during summer open grassy places, especially meadows, and but for its exceedingly sweet song would scarcely be noticed, so unobtrusive is it in its habits and appearance. The song of this species is thus described by Mr. John Burroughs, in his charming book called "Wake Robin":

"Have you heard the song of the Field-Sparrow?" he asks. "If you have lived in a pastoral country, with broad upland pastures, you could hardly have missed him. Wilson, I believe, calls him the Grass-Finch, and was evidently unacquainted with his powers of song. The two white lateral quills of his tail, and his habit of running and skulking a few yards in advance of you as you walk through the fields, are sufficient to identify him. Not in meadows or orchards, but in high, breezy pasture-grounds, will you look for

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is most noticeable after sundown, when other birds are silent. For this reason he has been aptly called the Vesper Sparrow, following his team from the field at dusk to the barn. His song is not so brisk and varied as that of the Song Sparrow, being softer and wilder, sweeter and more plaintive. It is the best parts of the lay of the latter to the sweetest of the Wood Sparrow (*Spizella pusilla*), and you may call it the hymn of the Vesper-bird—the poet of the plain. Go to those broad, smooth, up-lying fields, where the cattle and sheep are grazing, and sit down on one of the grassy mounds, and listen to this song. On every side, near and far, you hear out the short grass which the herds are cropping, and the lowing of the cattle. Two or three long, silver notes of rest and peace, followed by subdued trills or quavers, constitute each separate phrase. You will catch only one of the bars, the breeze having blown the song part away. Such unambitious, unconscious melody is one of the most characteristic sounds in Nature. In the cornfields, the stubble, the furrow, the quiet herds, and the soft twilight among the hills, are all subtly expressed in the song of the Vesper Sparrow, as what they are at least capable of.”



Chondestes grammacus BP. 1838.—BAIRD, B. N. Am. 1858, 456, (part); Cat. N. Am. B. 1859, No. 344, (part).—COUES, Key, 1872, 146, (part); Check List, 1873, No. 186 (part); 2d ed. 1882, No. 281 (part). ("grammica"); B. N. W. 1874, 159 (part).—B. B. & R. Hist. N. Am. B. I. 1874, 562, pl. 51, fig. 1.—RIDGW. Nom. N. Am. B. 1881, No. 204.

Emberiza grammaca AUD. Synop. 1839, 101; B. Am. III, 1841, 63, pl. 158.

HAB. Mississippi Valley, north to Iowa, Wisconsin, and southern Michigan, east, regularly to Indiana, western Kentucky, etc., occasionally to Ohio, and casually to Massachusetts and the District of Columbia; west to eastern portion of the Great Plains; south to eastern Texas.

"SP. CHAR. Hood chestnut, tinged with black towards the forehead, and with a median stripe and superciliary stripe of dirty whitish. Rest of upper parts pale grayish olive, the interscapular region alone streaked with dark brown. Beneath white, a round spot on the upper part of the breast, a broad maxillary stripe cutting off a white stripe above, and a short line from the bill to the eye, continued faintly behind it, black. A white crescent under the eye, bordered below by black and behind by chestnut, on the ear-coverts. Tail-feathers dark brown, the outermost edged externally and with more than terminal third white, with transverse outline; the white decreasing to the next to innermost, tipped broadly with white. Length, 6 inches; wing, 8.30." (*Hist. N. Am. B.*)

The colors of the female are slightly duller than in the male, the chestnut less bright, the black not so intense; the pattern, however, is the same.

The young bird has the breast and throat with a good many spots of dark brown instead of the single large one on the breast. The other markings are more indistinct.

This handsomely marked bunting (for it is not a true sparrow, nor a finch) is found abundantly in all suitable localities, its favorite resort being fertile prairies and meadows adjoining strips or groves of timber. In Illinois it evinces a special fondness for corn-fields, in which it builds its nest at the foot of the stalks, while the male sings from the fence or the top of a small tree by the roadside.

It has been a matter of surprise to us that writers who have described the habits of western birds have not mentioned more particularly the vocal capabilities of this bird, which in sprightliness and continuity of song has few, if any, rivals among the North American *Fringillidæ*. Words entirely fail to describe its song, which, among the oak groves of California, as well as on the prairies of Illinois, is pre-eminent for the qualities above mentioned. As the bird perches upon the summit of a small tree, a fence post, or a telegraph wire, his notes may be heard throughout the day—in the morning before those of any other, and late in the evening when all else but this unweary songster are silent; indeed, often have we been awakened at midnight by a sudden outburst of silvery warblings from one of this species. This song is composed of a series of chants, each syllable rich, loud, and clear, interspersed

with emotional trills. At the beginning the song reminds one somewhat of that of the Indigo Bird (*Passerina cyanea*), but the notes are louder and more metallic, and their delivery more vigorous. Though seemingly hurried, it is one continued gush of sprightly music; now gay, now melodious, and then tender beyond description,—the very expression of emotion. At intervals the singer falters, as if exhausted by exertion, and his voice becomes scarcely audible; but suddenly reviving in his joy, it is resumed in all its vigor, until he appears to be really overcome by the effort.

The range of this species is probably pretty general within the State except in those districts over which forests still largely prevail. In Cook county, according to Mr. Nelson, (*Bull. Essex. Inst.* Vol. VIII., 1876, p. 107), it is "a common summer resident. Arrives the last of April or first of May, nesting the last of this month; departs August 25th to September 10th. Frequents barren fields and borders of prairies containing a sparse growth of small trees and rank weeds. Its nest is generally placed at the foot of some rank weed in a bare piece of ground. My observations regarding the song and general habits of the species, coincide with those of Mr. Ridgway as given in *North American Birds* (Vol. I., p. 561)."

The memoranda of Mr. H. K. Coale, relating to this species, which he has kindly allowed me to quote here, are as follows:

"This is a rather rare summer resident. About once a year I run across a stray pair on a burnt prairie or by the road. In July, 1883, saw one on a bare piece of land near woods, and watched him for half an hour or more; was quite unsuspicious and kept

"This genus embraces some of the most beautiful of American Sparrows, all of the largest size in their subfamily.

"All the species properly belonging to this genus are North American; several South American species have, however, been assigned to it; but they are none of them strictly congeneric with those given below." (*Hist. N. Am. B.*)

Several Neotropical *Fringillidæ* have been referred to *Zonotrichia*, but none of them are strictly congeneric with the North American species, which together constitute a very distinctly circumscribed group. *Z. quinquestrata* SCL. & SALV. and *Z. mystacalis* HARTL. are apparently referable to *Amphispiza* COUES, of which the *Emberiza bilineata* CASSIN is typical, though they may possibly constitute a generic or subgeneric group by themselves; while *Z. pileata* (BODD.), a species distributed extensively over Central and South America, comes nearer the genus *Pyrgisoma*.

This species of *Zonotrichia* (as properly restricted) may be distinguished as follows:

A. No yellow supraloral spot, and throat not abruptly white.

a. Crown black without lighter median stripe, but sometimes squamated with pale or dull whitish.

1. *Z. querula*. *Adult*: Crown, lores, chin, and throat, uniform deep black; beneath pure white, the sides striped with black; sides of head gray; back light grayish brown, streaked with brownish black. *Young, first winter*: Crown black, the feathers bordered with pale grayish brown, producing a scaled appearance; throat white, bordered on each side with a dusky streak; a blackish patch, or cluster of spots, on the jugulum; sides of head and neck buffy.

b. Crown black or brown, divided by a white, buff or yellowish stripe.

1. Median stripe of crown white (in adult) or buff (in young).

2. *Z. leucophrys*. Lores black or brown. *Adult*: Head-stripes black (one on each side of crown and one behind the eye) and white (one on middle of crown and one over the ear-coverts). Back light ash-gray, streaked with chestnut-brown; edge of wing white, breast clear light ash-gray. *Young, first winter*: Head-stripes chestnut-brown and dull buff; otherwise similar to adult. *Young, first plumage*: Crown dusky blackish on sides, the middle whitish streaked with dusky; throat and breast more or less streaked with dusky.

3. *Z. gambeli*.* Pattern of coloration exactly as in *leucophrys*, except that the lores are grayish white, or (in young) grayish buff, confluent with the light superciliary stripe. Median stripe of crown grayish white, much narrower than lateral black stripes; back olive-brownish, streaked with brownish black; edge of wing yellowish; whole throat, foreneck, etc., dingy gray.

4. *Z. intermedia*. Similar to *Z. gambeli*, but median stripe of crown pure white, wide as or wider than black lateral stripes; back ashy, streaked with chestnut-brown; edge of wing white; throat, etc., pale ashy. (Colors exactly as in *leucophrys*, except as to the lores, which are grayish white instead of black.)

*Confined to the Pacific Coast.

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fore part of crown yellow centrally.
Middle of crown, anteriorly, bright greenish yellow (in adult) or
in young). *Adult* Pileum black laterally, the median portion yellow
and ash-gray posteriorly. Plumage otherwise exactly as in *Z.*
Young, in first winter: No distinct stripes on crown, which is dull
ash obscured by grayish brown, and streaked with dusky; the
distinct posteriorly, and sometimes forming an ill-defined stripe
otherwise, like the adult.
spot, throat abruptly white.
Adult: Two broad stripes on the crown, and a narrow one behind
a white stripe in middle of crown, and one over ear-coverts, the
bright yellow over lores; ear-coverts and jugulum deep ash;
crown streaked with black. *Young, first winter*: Similar to adult,
rusty dusky-brown and pale rusty buff, the yellow over the
white throat-patch, less distinct. *Young, first plumage*: Crown
brown, with a narrow whitish middle stripe; superciliary stripe
with no yellow over lores, jugulum streaked with dusky. Throat
white.

Zonotrichia querula (Nutt.)

HARRIS'S SPARROW.

Mourning Finch.

OTT. MAG. 2d ed. i, 1849, 558.
GAMB. 1847.—BAIRD, B. N. Am. 1858, 462; Cat. N. Am. B. 1869, No. 348.
872, 146; Check List, 1873, No. 185; 2d ed. 1883, No. 390; B. N. W. 1874,
Hist. N. Am. B. i, 1874, 577, pl. 26, figs. 4, 7.—RIDG. Nom. N. Am. B.

species. Its nest and eggs are to this date (June, 1886) unknown, as is also its exact range during the breeding season.

The only specimens of this species known to the writer as having been taken in Illinois were those recorded in the "Nuttall Bulletin" for January, 1880, pp. 30, 31, one of which was obtained at Bloomington, in the spring of 1877, the other at Normal, on the 14th of November, 1879, both by Mr. W. H. Garman. Several examples have been taken in southern Wisconsin, near the Illinois line, one of which, shot at Racine, by Dr. Hoy, was mentioned by Mr. Nelson in his list, while three others, reported to me by Mr. H. K. Coale, were collected at LaCrosse, October 3, 1883.

Zonotrichia leucophrys (Forst.)

WHITE-CROWNED SPARROW.

Emberiza leucophrys FORST. Philos. Trans. lxii, 1772, 382, 403, 426.—WILS. Am. Orn. iv, 1811, 49, pl. 31, fig. 4.

Fringilla leucophrys BP. 1838.—NUTT. Man. i, 1832, 479.—AUD. Orn. Biog. ii, 1834, 88; v, 1839, 515, pl. 144; Synop. 1839, 121; B. Am. iii, 1841, 157, pl. 192.

Fringilla (Zonotrichia) leucophrys SW. & RICH. F. B.—A. ii, 1831, 255.

Zonotrichia leucophrys BP. 1838.—BAIRD, B. N. Am. 1858, 458; Cat. N. Am. B. 1859, No. 345.—COUES, Key, 1872, 144; Check List, 1873, No. 183; 2d ed. 1882, No. 276; B. N. W. 1874, 154.—B. B. & R. Hist. N. Am. B. i, 1874, 566, pl. 25, figs. 9, 10.—RIDGW. Nom. N. Am. B. 1881, No. 206.

HAB. Breeding from northern Labrador to the Rocky Mountains, and south to at least latitude 48° on the Sierra Nevada in California and the higher ranges of Colorado. In winter, most of the eastern United States, wintering chiefly south of 38°; also, portions of Mexico, including Cape St. Lucas.

"SP. CHAR. Head, above, upper half of loreal region from the bill, and a narrow line through and behind the eye to the occiput, black; a longitudinal patch in the middle of the crown, and a short line from above the anterior corner of the eye, the two confluent on the occiput, white. Sides of the head, forepart of breast, and lower neck all round, pale ash, lightest beneath, and shading insensibly into the whitish of the belly and chin; sides of the belly and under tail-coverts tinged with yellowish brown. Interseapular region streaked broadly with dark chestnut-brownish. Edges of the tertiaries brownish chestnut. Two white bands on the wing.

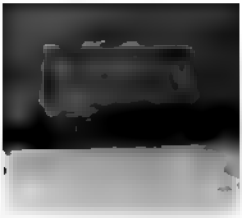
Female. Similar but smaller; immature birds in first winter, with the black and white stripes on the crown replaced by dark chestnut-brown and brownish yellow. Length, 7.10 inches; wing, 3.25. **Young of the year** thickly streaked with dusky on the breast. The lateral stripes of the crown dull brown, the median one streaked whitish."

"The white of the crown separates two black stripes on either side, rather narrower than itself. The black line behind the eye is continued anterior to it into the black at the base of the bill. The lower eyelid is white. There are some obscure cloudings of darker

on the neck above. The rump is immaculate. No white on the tail except very obscure tips. The white on the wings crosses the ends of the middle and greater coverts." (*Hist. N. Am. B.*)

This fine sparrow is usually an abundant migrant in the northern portions of the State, and a more or less common winter resident in the southern parts. At Mount Carmel it was often abundant throughout the winter, frequenting, during the coldest weather, the door-yards and gardens, in company with Snowbirds (*Junco hyemalis*), Tree Sparrows, White-throated Sparrows, Yellow-rump Warblers, and other familiar species. Its clear, but rather subdued, whistling song was often heard just before its departure for the north. This song much resembles that of the White-throated Sparrow, but is less monotonous and rather more plaintive.

"Among the birds that tarry briefly with us in the spring on their way to Canada and beyond," writes Mr. John Burroughs, in *Scribner's*, "there is none that I behold with so much pleasure as the White-crowned Sparrow. I have an eye out for him all through April and the first week in May. He is the rarest and most beautiful of the Sparrow kind. He is crowned as some hero or victor in the games. He is usually in company with his congener, the White-throated Sparrow, but seldom more than in the proportion of one to twenty of the latter. Contrasted with this bird, he looks like its more fortunate brother, upon whom some

*Zonotrichia albicollis* (Gmel.)

WHITE-THROATED SPARROW.

Popular synonyms. Peabody Bird (New England); Yellow-browed Sparrow.

Fringilla albicollis GMEL. S. N. 1, 1788, 928.—WILS. Am. Orn. iii, 1811, 51, pl. 22, fig. 2.

Zonotrichia albicollis SW. 1837.—BAIRD, B. N. Am. 1858, 463; Cat. N. Am. B. 1859, No. 349.

—COUES, Key, 1872, 144, fig. 88; Check List, 1873, No. 182, 2d ed. 1882, No. 275; B. N. W. 1874, 151.—B. B. & B. Hist. N. Am. B. 1, 1874, 574, pl. 26, fig. 10.—RIDGW. Nom. N. Am. B. 1881, No. 209.

Fringilla pennsylvanica LATH. Ind. Orn. 1790, 446.—AUD. Orn. Bfög. 1, 1831, 42, pl. 8; Synop. 1839, 121; B. Am. iii, 1841, 153, pl. 191.

HAB. Eastern North America, breeding from northern United States north to the "Fur Countries." Winters in the United States, chiefly south of 40°, and west to the borders of the Great Plains; accidental west to Utah and Oregon; also, in England.

"SP. CHAR. Two black stripes on the crown, separated by a median one of white. A broad superciliary stripe from the base of the mandible to the occiput, yellow as far as the middle of the eye, and white behind this. A broad black streak on the side of the head from behind the eye. Chin white, abruptly defined against the dark ash of the sides of the head and upper part of the breast, fading into white on the belly, and margined by a narrow black maxillary line. Edge of wing and axillaries yellow. Back and edges of secondaries rufous brown, the former streaked with dark brown. Two narrow white bands across the wing-coverts. Length, 7 inches; wing, 3.10; tail, 3.20. Young of the year not in the collection." (*Hist. N. Am. B.*)

Few birds, if any, are more abundant or more generally distributed than is the present species, during the winter, throughout the more eastern United States. From the eastern border of the Great Plains to the Atlantic coast it is decidedly the most numerous of the Fringillidæ,—every hedge-row, brier-patch, brush-pile or similar place being frequented by dozens or scores of individuals. During the day these occupy themselves silently in gleaning for food among the dead leaves, but at the approach of dusk congregate more closely together, and before seeking their "roost," in the thicker growths of a swamp, in brush-piles, etc., become quite noisy, calling to one another with a sharp, penetrating, almost metallic chirp, which is peculiarly in accord with a cold, drear winter evening. In the spring, before their departure for the north, the males occasionally whistle their monotonous but exceeding clear and plaintive chant, sounding like *pe-pe-pe'body, pe'body, pe'body*,—on which account the species has in parts of New England received the name of "Peabody Bird."

GENUS *SPIZELLA* BONAPARTE.

Spizella BONAP. Geog. and Comp. List, 1838, 33. Type, *Fringilla canadensis* LATH., = *F. monticola* GMEL.

"GEN. CHAR. Bill conical, the outlines slightly curved; the lower mandible decidedly larger than the upper; the commissure gently sinuated; the roof of the mouth not

knobbed. Feet slender; tarsus rather longer than the middle toe; the hinder toe a little longer than the outer lateral, which slightly exceeds the inner; the outer claw reaching the base of the middle one, and half as long as its toe. Claws moderately curved. Tertiaries and secondaries nearly equal, wing somewhat pointed, reaching not quite to the middle of the tail. First quill a little shorter than the second and equal to the fifth; third longest. Tail rather long, moderately forked, and divaricated at the tip; the feathers rather narrow. Back streaked; rump and beneath immaculate. Young streaked beneath.

"This genus differs from *Zonotrichia* principally in the smaller size, and longer and forked instead of rounded tail.

"Birds of the year of this genus are very difficult to distinguish, even by size, except in *monticola*. The more immature birds are also very closely related. In these the entire absence of streaks on a plumbeous head point to *atrigrularis*; the same character in a reddish cap, and a reddish upper mandible, to *pusilla*; a dusky loreal spot, with dark streaks, and generally a rufous shade on top of head, to *socialis*. *S. breweri*, with a streaked head, lacks the dusky lore and chestnut shade of feathers. *S. pallida* generally has a median light stripe in the cap, and a dusky mandibular line." (*Hist. N. Am. B.*)

With a single exception, all the known species of this genus are North American, though one of them (*S. atrigrularis*) barely comes within our borders in Arizona and southern California. The single purely extralimital species is *S. pinetorum* SALVIN, of the Guatemalan highlands. It is closely related to *S. socialis*, but is evidently distinct.

Leaving out *S. atrigrularis* and *S. northeni*,* the species inhabiting the United States may be characterized as follows:

COMMON CHARACTERS. Back brownish, sharply streaked with black; rump plain grayish; wings with two light bands; lower parts unstreaked, except in young.

A. Crown rufous in adults.



B Crown grayish brown, streaked with black, at all ages.

4. *S. pallida*. *Adult*: Crown streaked black and brown, divided by a distinct stripe of light brownish gray; nape ash-gray; ear-coverts light brownish, edged above and below by a dusky streak; distinct maxillary and superciliary stripes of brownish white, the former bordered underneath by a dusky bridle; beneath continuous white the breast and sides faintly shaded with grayish brown. *Young*: Head more tinged with fulvous, and the markings less distinct; breast streaked with dusky.
5. *S. breweri*. *Adult*: Crown pale grayish brown, streaked with black, and without middle stripe; nape and back similar; no distinct superciliary or maxillary stripe, and ear-coverts but slightly darker than adjoining portions. *Young*: Similar, but breast streaked with dusky.

Spizella monticola (Gmel.)

TREE SPARROW.

Popular synonyms. Canadian Sparrow; Winter Chippy.

Fringilla monticola GMEL. S. N. 1, 1788, 912.

Spizella monticola BAIRD, B. N. Am. 1858, 472; Cat. N. Am. B. 1859, No. 357.—COUES, Key, 1872, 142; Check List, 1873, No. 177; 2d ed. 1882, No. 268; B. N. W. 1874, 146.—B. B. & R. Hist. N. Am. B. ii, 1874, 3, pl. 27, fig. 5.

Fringilla canadensis LATH. Ind. Orn. 1, 1790, 434.—NUTT. Man. 1, 1832, 495.—AUD. Orn. Biog. ii, 1834, 511; v, 1839, 504, pl. 188.

Emberiza canadensis SW. & RICH. 1831.—AUD. Synop. 1839, 105; B. Am. iii, 1841, 83, pl. 166.

Fringilla arborea WILS. Am. Orn. ii, 1810, 12, pl. 16, fig. 3.

Spizella montana "(FORST.)" RIDGW. Nom. N. Am. B. 1881, No. 210.

HAB. Eastern North America, breeding (so far as known) wholly north of the United States (Labrador, Hudson's Bay Terr., and thence nearly or quite to the Arctic coast), wintering chiefly within the United States. (In western North America represented by the paler colored *S. monticola ochracea* BREWSTER, which breeds in Alaska, and migrates in winter to the Western States and Territories.)

SP. CHAR. Mandible yellow, maxilla black. Pileum rich rufous, also a distinct post-ocular stripe; sides of head light ash-gray, including a broad superciliary stripe, the latter nearly white anteriorly. Nape mixed ashy and rufous. Back rusty ochraceous, streaked with rufous and black. Wings rusty, the feathers blackish centrally; both rows of wing-coverts broadly tipped with pure white, forming two distinct bands; tertials bordered with white toward ends. Rump uniform grayish olive. Tail dark grayish brown, feathers edged with paler. Lower parts whitish, tinted with ashy anteriorly, sides and flanks tinged with ochraceous, sides of breast tinged with rufous, and middle of jugulum with a dusky spot. Total length, 6.25-6.50 inches; extent, 9.25-9.50; wing, about 2.80-3.10; tail, 2.80-3.00.

This pretty little sparrow is one of our most common and familiar winter residents, occurring everywhere throughout the State, and in the sheltered bushy swamps in the more southern counties congregating in immense numbers. It comes familiarly about the door-yards and gardens, gleaning from the snow in company with Snow-birds (*Junco hyemalis*) and other winter residents. During the warmer days of winter, or even if the weather be cold though clear, the rich medley of soft jingling notes uttered by a number of

individuals of this species is not excelled for sweetness by any bird notes, while during the love season, says Dr. Brewer, "the Tree Sparrow is quite a fine musician, its song resembling that of the Canary, but finer, sweeter, and not so loud." According to Mr. Brewster, "their song is a loud, clear and powerful chant, starting with two high notes, then falling rapidly, and ending with a low, sweet warble." After mentioning the fact that this species is, in northeastern Illinois, an "abundant winter resident about thickets and in marshes," and that it "arrives the 15th of October and departs the 1st of April," Mr. Nelson, in his list (p. 108) thus appropriately describes their song:

"The first of March they collect in large flocks and are very musical. Often a large portion of the flock will unite in song which, although it may be more than equaled later in the season, yet, coming as it does between winter and spring, and so touchingly plaintive, one involuntarily stops to listen with a peculiar feeling of pleasure."

Spizella socialis (Wils.)

CHIPPING SPARROW.

Popular synonyms. Chippy; Chip-bird; Hair-bird.

Fringilla socialis WILS. Am. Orn. II, 1810, 127, pl. 16, fig. 5.—NUTT. Man. I, 1832, 497.—AUD.

so well known is the common Chipping Sparrow, Chip-bird, or Chippy, that a particular account of its habits is hardly necessary here. Perhaps the most familiar and confiding of all our birds, it is at the same time one of the most beneficial; and, so far as we are aware, possesses not a single objectionable trait. Says Dr. Brewer (*Hist. N. Am. B.*, Vol. II., pp. 9, 10):

"The tameness and sociability of this bird surpass that of any of the birds I have ever met with in New England, and are only equaled by similar traits manifested by the Snowbird (*J. hyemalis*) in Pictou. Those that live about our dwellings in rural situations, and have been treated kindly, visit our doorsteps, and even enter the houses, with the greatest familiarity and trust. They will learn to distinguish their friends, alight at their feet, call for their accustomed food, and pick it up when thrown to them, without the slightest signs of fear. One pair which, summer after summer, had built their nest in a fir-tree near my door, became so accustomed to be fed that they would clamor for their food if they were any morning forgotten. One of these birds, the female, from coming down to the ground to be fed with crumbs, soon learned to take them on the flat branch of the fir near her nest, and at last to feed from my hand, and afterwards from that of other members of the family. Her mate, all the while, was comparatively shy and distrustful, and could not be induced to receive his food from us, or to eat in our presence."

***Spizella pallida* (Swains.)**

CLAY-COLORED SPARROW.

Emberiza pallida SWAINS. F. B.-A. II, 1831, 251.

Spizella pallida BP. 1838.—BAIRD, B. N. Am. 1858, 474; Cat. N. Am. B. 1859, No. 368.—

COUES, Key, 1872, 148; Check List, 1873, No. 189; 2d ed. 1882, No. 272; B. N. W. 1874, 148.—

B. B. & R. Hist. N. Am. B. II, 1874, II, pl. 27, fig. 3.—RIDG. Nom. N. Am. B. 1881, No. 212.

Emberiza shattuckii AUD. B. Am. VII, 1843, 347, pl. 493.

HAB. Great Plains, from the Saskatchewan to Texas, and (in winter) along the southern border to Arizona and Cape St. Lucas, west to base of Rocky Mountains, east to prairies of Iowa, Wisconsin, and Illinois. (NOTE. The "*Emberiza pallida*" of Audubon's works is not this species, but *S. breweri*, Cass., which replaces *S. pallida* from the Rocky Mountains to the Pacific coast. "The two species are closely allied, but quite distinct.")

"SP. CHAR. Smaller than *S. socialis*. Back and sides of hind neck ashy. Prevailing color above pale brownish yellow, with a tinge of grayish. The feathers of back and crown streaked conspicuously with blackish. Crown with a median pale ashy and a lateral or superciliary ashy white stripe. Beneath whitish, tinged with brown on the

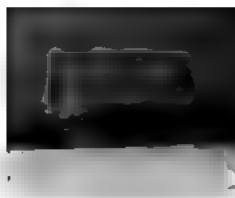
BIRDS OF ILLINOIS.

...arrow brown streak on the edge of the ...
...brownish yellow, margined above and below by
...dark stripes on the face. Bill reddish, dusky towards tip
...wing 25.

...is quite conspicuous, and streaked above with
...maculate. The streaks on the feathers of
...form continuous lines, about six in number. The
...the ear-coverts is a postocular one. That on
...forms the lower border of a white maxillary
...and curves around behind the ear-coverts,
...of the neck. The wing feathers are all mar-
...and there is an indication of two light bands
...of the coverts.

...of this species is thickly streaked beneath, over the
...and belly, with brown, giving to it an entirely differ-
...from the adult. The streaks in the upper parts,
...and more conspicuous. The margins of the feathers
...more rusty.

...is readily distinguishable from the other American
...except *S. breweri* (which see), in the dark streaks and
...stripe on the crown, the paler tints, the dark line on
...etc." (Hist. N. Am. B.)

***Spizella pusilla* (Wils.)****FIELD SPARROW.**

Popular synonyms. Field Chippy, or Chip-bird; Red-billed Chippy.

Motacilla juncorum GMEL. S. N. 1, 1788, 362 (based on *Little Brown Sparrow* of CATESBY).

Fringilla juncorum NUTT. MAN. 1, 1832, 499; ed. 1840, 1, 577.

Fringilla pusilla WILS. AM. ORN. II, 1810, 121, pl. 16, fig. 2.—AUD. ORN. BIOG. II, 1834, 229, pl. 139.

Emberiza pusilla AUD. SYNOP. 1839, 104; B. AM. III, 1841, 77, pl. 164.

Spizella pusilla BF. 1838.—BAIRD, B. N. AM. 1858, 473; Cat. N. AM. B. 1859, No. 358.—COUES,

Key, 1872, 143; Check List, 1873, No. 179; B. N. W. 1874, 146.—B. B. & R. Hist. N. AM. B.

II, 1874, 5, pl. 27, fig. 2.—RIDGW. NOM. N. AM. B. 1881, No. 214.

Spizella agrestis "(BASTR.)" COUES, 2d Check List, 1872, No. 271.

HAB. Eastern United States, breeding throughout (except in Gulf States?) and wintering chiefly south of 38°.

SP. CHAR. Bill brownish red. Crown continuous rufous, with a faint indication of an ashy central stripe, and ashy nuchal collar. Back somewhat similar, with shaft-streaks of blackish. Sides of head and neck (including a superciliary stripe) ashy. Ear-coverts rufous. Beneath white, tinged with yellowish anteriorly, the sides of the breast with a rufous patch. Tail-feathers and quills faintly edged with white. Two whitish bands across the wing-coverts. Autumnal specimens more rufous. Length about 5.75; wing, 2.34.

"This species is about the size of *S. socialis*, but is more rufous above; lacks the black forehead and eye stripe; has chestnut ears, instead of ash; has the bill red, instead of black; lacks the clear ash of the rump; has a longer tail, etc. It is more like *monticola*, but is much smaller; lacks the spot on the breast, and the predominance of white on the wings, etc. The young have the breast and sides streaked, and the crown slightly so." (*Hist. N. Am. B.*)

Although equally common with the Chipping Sparrow, and in many localities even more abundant, the little Field Sparrow is far less known on account of its more secluded habits. Instead of seeking the society of man it almost wholly avoids the towns and seems inseparably attached to the rural districts. It is by no means timid or retiring, however, but prefers the country because only there can it find those localities which are essential to its presence.

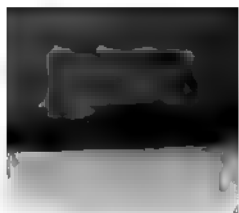
The Field Sparrow inhabits all sorts of bushy localities, such as hazel and blackberry thickets, old fields grown up to weeds and sprouts, the borders of prairies, etc. Its nest is built either on the ground or not higher than two or three feet above it, and the eggs are very different in color from those of the Chipping Sparrow, being greenish or bluish white, thickly speckled with reddish brown. Frequently the nest is built in gooseberry or currant bushes in a farm-house garden, but oftener a more secluded spot is chosen.

While conceding that this species is "a very varied and fine singer," Dr. Brewer (*Hist. N. Am. B.* Vol. II., p. 6) says "its notes are not very powerful, and cannot be heard any distance." This has not been the writer's experience, however, his observations leading him to quite the contrary opinion. In Illinois, Indiana, Maryland, and Virginia, where he has listened to its song on countless occasions, he has always regarded the song of the Field Sparrow as being particularly characterized by its power, being certainly far louder and capable of being heard at a much greater distance, than that of the Song Sparrow (*Melospiza fasciata*) or Vesper Sparrow (*Pooecetes gramineus*) or any others of the smaller species of this family. The Field Sparrow's song is further characterized by its plaintiveness, and were it not for this quality would rank among the very finest bird songs which can be heard in our fields. Sometimes a particularly gifted male will repeat twice or three times the usual song, without faltering between, and then the performance becomes truly fine.

GENUS JUNCO WAGLER.

Junco WAGLER, Isis, 1831, 596. Type, *Fringilla cinerea* Sw.

GEN. CHAR. Bill small, conical; culmen curved at the tip; the lower jaw quite as high as the upper. Tarsus longer than the middle toe; outer toe longer than the inner, barely reaching as far as the middle of the latter; extended toes reaching about to the middle of the tail. Wings rather short; reaching over the basal fourth of the exposed surface of the tail; primaries, however, considerably longer than the secondaries and tertials, which are nearly equal. The second quill longest, the third to fifth successively but little shorter; first longer than sixth, much exceeding secondaries. Tail moderate, a little shorter than the wings; slightly emarginate and rounded. Feathers rather narrow; oval at the end. Nostrils not far apart; large. Feet rather long. The middle toe of the hind foot



States). In Eastern North America only two species occur, and one of these (*J. oregonus*) merely as a straggler. Both belong to the Illinois fauna, and may be distinguished as follows:

1. *J. hyemalis*. Plain blackish gray, or slate-gray the belly and lateral tail-feathers white. (Abundant winter resident.)
2. *J. oregonus*. Head, neck, and jugulum, black; back brownish; rump, only, slate-gray; sides light pinkish brown; belly and lateral tail-feathers white, as in *J. hyemalis*.

Of the western species, *J. aikeni* is larger than *J. hyemalis*, and usually has distinct white wing-bands; the sides ash-gray, and the bill light pinkish. *J. annectens* has the head, neck, jugulum, and upper parts ash-gray (back more brownish), the sides pinkish; bill light pinkish. *J. caniceps* resembles *J. annectens*, but has the back bright rufous and the sides ashy, like the breast. *J. dorsalis* resembles *J. caniceps*, but has the upper mandible black, the lower yellow, and the lower parts grayish white. *J. cinereus* is allied to *dorsalis*, and like that species has the iris bright yellow (in other species, excepting *J. dorsalis*, the eye is dark brown or claret color), but has the rufous of the back extended over the wing-coverts and tertials. Each species, or race, has likewise distinctive proportions and a separate breeding range.

Junco hyemalis (Linn.)

SLATE-COLORED JUNCO.

Popular synonyms. Black Snowbird; Common Snowbird; Slate-colored Snowbird; Gray Snowbird; Eastern Snowbird.

Fringilla hyemalis LINN. S. N. ed. 10, 1, 1758, 183.—AUD. Orn. Biog. i, 1831, 72; v, 505, pl. 13. *Niphaea hyemalis* AUD. Synop. 1839, 106; B. Am. iii, 1841, 88, pl. 167.

Junco hyemalis SCL. 1857.—BAIRD, B. N. Am. 1858, 468; Cat. N. Am. B. 1859, No. 354.—COUES, Key, 1872, 141; Check List, 1873, No. 174; 2d ed. 1882, No. 261 ("*hiemalis*"); B. N. W. 1874, 141.—B. B. & R. Hist. N. Am. B. i, 1874, 580, pl. 26, fig. 5.—RIDGW. Nom. N. Am. B. 1881, No. 217.

Fringilla hudsonia FORST. Philos. Trans. lxi, 1772, 428.—WILS. Index, vi, 1812, p. xlii.

Fringula nivalis WILS. Am. Orn. iii, 1810, 129, pl. 16, fig. 6.—NUTT. Man. i, 1832, 491.

HAB. Northern North America, breeding from northern New England to Alaska (Yukon district); in winter, whole of eastern United States, and straggling westward (Colorado, Utah, Arizona, etc.).

"SP. CHAR. Everywhere of a grayish or dark ashy black, deepest anteriorly; the middle of the breast behind and of the belly, the under tail-coverts, and first and second external tail-feathers, white; the third tail-feather white, margined with black. Length, 6.25; wing, about 3.00. In winter washed with brownish. Young streaked above and below.

"The wing is rounded; the second quill longest; the third, fourth, and fifth, successively, a little shorter; the first longer than the sixth. Tail slightly rounded, and a little emarginate. In the full

BIRDS OF ILLINOIS.

There is no trace of any second color on the back, except a very faint and scarcely appreciable wash of dull brown on the whole upper parts. The markings of the third year are somewhat in specimens. Sometimes the whole tip of the wing is brown; sometimes the white extends to the end; sometimes the webs are margined with brown; sometimes the outer edge of the wing is brown; sometimes the brownish wash on the back is more extensive. (St. N. Am. B.)

Specimens have more or less distinct white wing-bands.

The Snowbird is known to every one as a common and familiar resident, there are few people but to whom its presence is a mystery; and the question is often asked, where do the Snowbirds in summer, and where do they go? The summer home of this interesting species includes the whole of the far North from northern Maine and the western British Provinces to Alaska, north to the Arctic Circle, and along the higher portions of the Alleghanies to an indefinite distance southward.*

It is found in Maine, and in all the islands of the Bay of Fundy, throughout New Brunswick and Nova Scotia," Dr. Audubon says, "this by far the most common and familiar species, is found in Pictou, where it abounded in the gardens, in repeated swarms, and was often seen within the out-buildings to build its nests. In a

their migration. Professor Forbes informs me of such an instance which came under his own observation, as follows:

"While on a recent trip to southern Illinois, I astonished myself by shooting, June 9, one mile from the Ohio river, near Elizabethtown, in Hardin county, an adult specimen of the Common Snowbird (*Junco hyemalis*). I killed the bird from a tree in the edge of a wood. I neither heard nor saw another of the species there." (See "Nuttall Bulletin," July, 1881, p. 180.)

Junco hyemalis oregonus (Towns.)

OREGON JUNCO.

Popular synonyms. Black-headed Snowbird; Oregon Snowbird.

Fringila oregona Towns. Jour. Phil. Ac. vii, 1837, 183. — AUD. Orn. Biog. v, 1839, 63, pl. 298.

Niphaea oregona AUD. Synop. 1839, 107; B. Am. iii, 1841, 91, pl. 163.

Junco oregonus SCL. 1857. — BAIRD, B. N. Am. 1858, 466; Cat. N. Am. B. 1859, No. 352. —

COUES, Key, 1872, 141; Check List, 1873, No. 175; 2d ed. 1882, No. 263; B. N. W. 1874, 143.

B. B. & R. Hist. N. Am. B. i, 1874, 584, pl. 26, fig. 2. — RIDGW. Nom. N. Am. B. 1881, No. 218.

HAB. Pacific coast of North America, breeding from higher mountains of southern California north to Sitka; in winter throughout the western United States, and even straggling to the Atlantic States (Kansas, Illinois, etc.)

In its habits and notes this bird is so completely a counterpart of the common eastern Snowbird (*J. hyemalis*) that the writer is unable to discover, from the accounts of writers or from his own experience, any peculiarities whatsoever. It is, however, very different in its plumage, as may be seen from the description given above, and the comparative diagnoses on page 277.

GENUS *PEUCÆA* AUDUBON.

Peucæa AUD. Synop. 1839, 112. Type *Fringilla bachmanii* AUD.

"**GEN. CHAR.** Bill moderate. Upper outline and commissure decidedly curved. Legs and feet, with the claws, small; the tarsus about equal to the middle toe; the lateral toes equal, their claws falling considerably short of the middle one; the hind toe reaching about to the middle of the latter. The outstretched feet reach rather beyond the middle of the tail. The wing is very short, reaching only to the base of the tail; the longest tertials do not exceed the secondaries, while both are not much short of the primaries; the outer three or four quills are graduated. The tail is considerably longer than the wings; it is much graduated laterally; the feathers, though long, are peculiarly narrow, linear, and elliptically rounded at the ends.

"Color beneath plain whitish or brownish, with a more or less distinct dusky line each side of the chin. Above with broad obsolete brown streaks or blotches. Crown uniform, or the feathers edged with lighter." (*Hist. N. Am. B.*)

Only one species of this southern genus is known to occur in Illinois. Another however, may be expected, at least as a straggler, and for this reason the comparative characters of the two are given here.

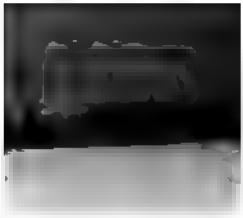
1. *P. aestivalis*. *Adult*: Above reddish brown, streaked with gray, and usually spotted on the back with black; beneath dull buffy, whitish on the belly. Middle tail-feathers without distinct bars.
α. aestivalis. Crown streaked with blackish, and black streaks on back always very distinct. *Hab.* Florida and lower Georgia.
- β. bachmani*. Crown without black streaks, and black streaks on back frequently obsolete: general coloration much more "sandy" above, and clearer, or less dingy, buff below. *Hab.* North and South Carolina, west to eastern Texas, north to southern Illinois and Indiana.
2. *P. cassini*. Above brownish gray, spotted with grayish brown and black, but with no rusty; lower parts nearly uniform brownish white or pale brownish gray. Middle tail-feathers very distinctly barred with dusky. *Hab.* Southwestern U. S., north to Kansas.

Peuceea aestivalis bachmani (Aud.)

BACHMAN'S SPARROW.

Popular synonyms. Illinois Sparrow; Oak-wood Sparrow; Bachman's Finch.

Peuceea aestivalis Ridgw. Am. Nat., July 1872, 430 (Wabash Co., Illinois); Ann. N. Y. Lye. x, Jan. 1874, 373 (do.); Proc. Boston Soc. xvi, Feb. 13, 1874, 308, 326 (do., summer resid.); Bull. Nutt. Orn. Club, iii, Oct. 1878, 164 ("extremely local and quite rare").—NELSON, Bull. Essex. Inst., ix, 1877, 36, 49 (Mt. Carmel, Wabash Co., and Fox Prairie, Indiana).



the breast, paler on the throat and chin; a postocular streak of ferruginous along the upper edge of the auriculars; sides of the neck streaked with ferruginous; an indistinct dusky streak on each side of the throat, along the lower edge of the malar region; abdomen dull white; crissum creamy buff; edge of the wing, from the carpal to the carpo-phalangeal joint, bright yellow. Bill pale horn-color, the maxilla darker; iris brown; legs and feet pale brown.

Total length, about 6.00; wing, 2.25-2.60 (2.51); tail, 2.40-2.95 (2.69); bill, from nostril to tip, .30-.33; depth through base, .27-.30 (.29); tarsus, .70-.82 (.77); middle toe, .55-.60 (.59). *

Compared with typical *P. æstivalis*, in corresponding plumage, the differences of coloration are at once apparent. The upper parts are much paler, and more "sandy" in hue, and the black mesial streaks which in *æstivalis* mark all the feathers (except those of the nape and wings) are either entirely wanting, or confined to the interscapular region; the breast and sides are very distinctly ochraceous buff, these parts in *æstivalis* being dull buffy grayish. The proportions are very nearly the same in the two species, but *bachmanii* has a longer wing and a thicker bill, the average of five specimens, compared with six of *æstivalis*, being 2.51 and 0.29 respectively, against 2.40 and 0.26. *P. arizonæ* is so different as scarcely to need comparison, having, like *æstivalis*, the whole crown streaked with black; the general hue of the upper parts more of a hair-brown, and the lower parts nearly uniform pale buffy grayish, the abdomen not conspicuously lighter. It is also larger, measuring, wing 2.60, and tail 2.85.

While little is really known regarding the distribution of this species in Illinois, it probably occurs locally—that is, in suitable localities—throughout that portion of the State lying south of the parallel of 39°; and perhaps it extends still further north. It is emphatically a bird of open oak woods, where large white and post oaks prevail, with grass land immediately adjoining, or where the intervals between the trees consist of sward rather than undergrowth; but neglected fields, grown up to weeds, and in which old dead trees are left standing, are also its favorite haunt.

Bachman's Sparrow first came under my observation early in June, 1871, when several were seen and others heard, about half-way between Mount Carmel and Olney, the former in Wabash, the latter in Richland county, Illinois.

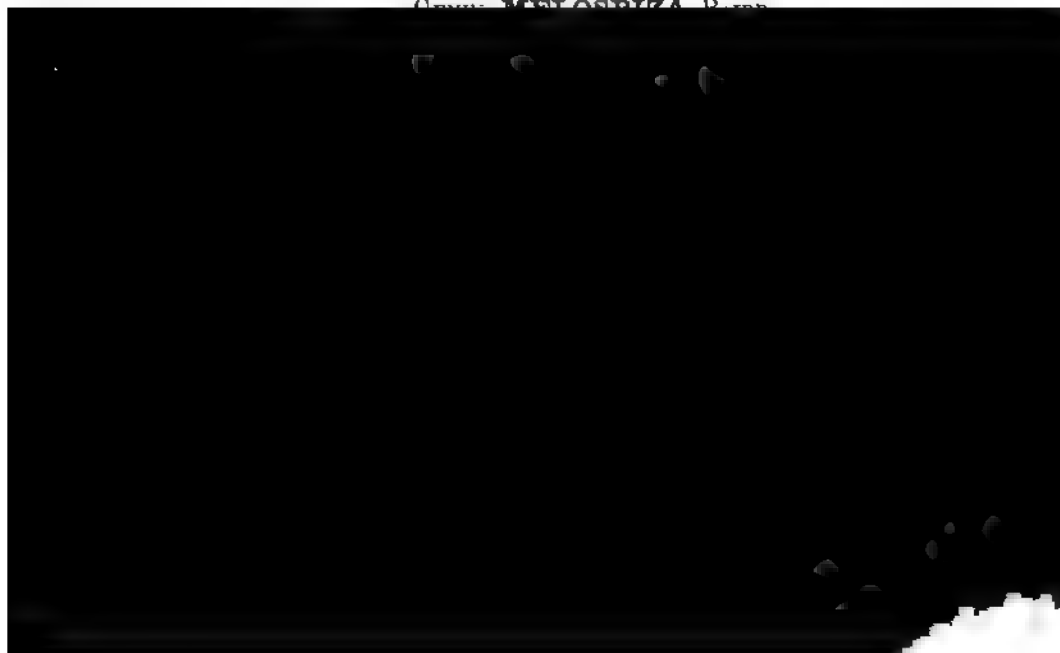
*These measurements represent the extremes and averages of ten adults.

After leaving this locality the species was lost sight of until the 11th of August following, upon our return to Mount Carmel. At the latter place it was found to be rather rare in certain places just outside the town limits, the localities frequented being invariably neglected weedy fields in which scattered dead trees were standing. Unlike most birds, this species sang with the greatest vigor, and frequently during the sultry midday, when the sky was brightest and the heat intense—the thermometer ranging from 90° to 108° in the shade. The song, while reminding one somewhat of the plaintive chant of the Field Sparrow (*Spizella pusilla*), was far sweeter and altogether louder; the modulation, as nearly as can be expressed in words, resembling the syllables *théééééé-thut, lut, lut, lut*, the first being a rich silvery trill, pitched in a high musical key, the other syllables also metallic, but abrupt, and lower in tone.

In July and August, 1875, several specimens of this species were collected by Messrs. E. W. Nelson and F. T. Jencks in the vicinity of Mount Carmel and on Fox Prairie, the latter in Richland county, about thirty-five miles to the northward of Mount Carmel. Mr. Nelson thus records his observations (*Bull. Essex Inst.*, Vol. IX., p. 88):

"Rather common. Those obtained were found about the fences or brush piles in half-cleared fields. They were shy and quite difficult to secure from their habit of diving into the nearest shelter when alarmed, or skulking, wren-like, along the fences, dodging from rail to rail. One was observed singing from a fence stake, but seeing the intruder it stopped abruptly and darted into a patch of weeds."

Genus MELOSPIZA, B. and



"This genus differs from *Zonotrichia* in the shorter, more graduated tail, rather longer hind toe, much more rounded wing, which is shorter; the tertiaries longer; the first quill almost the shortest, and not longer than the tertials. The under parts are spotted; the crown streaked, and like the back." (*Hist. N. Am. B.*)

The three species which occur in eastern North America (one of them peculiar to the Atlantic side) may be distinguished by the following characters:

- A.** Breast and sides distinctly streaked, at all ages.
 - a.** Maxillary stripe and jugulum white, like other lower parts, the streaks on breast broad, cuneate.
 - 1. *M. fasciata*. Above rusty grayish, streaked with brown and black. Wing about 2.70; tail nearly 3.00.
 - 2. *M. lincolni*. Above olive-brown, streaked with black. Wing 2.60, or less; tail 2.50, or less.*
 - b.** Maxillary stripe and jugulum buff, the other lower parts chiefly white; streaks on jugulum linear.
 - 3. *M. georgiana*. Breast and sides of head ashy; wings chestnut-rufous; back olive-brown, broadly streaked or spotted with black. *In breeding plumage*, crown (of both sexes) bright chestnut.

Melospiza fasciata (Gmel.)

Fringilla fasciata GMEL. S. N. I, 1788, 922.

Melospiza fasciata SCOTT, Am. Nat. x, 1876, 18.—RIDGW. Nom. N. Am. B. 1881, No. 231.—COUES, 2d Check List, 1882, No. 244.

Fringilla melodia WILS. Am. Orn. II, 1810, 125, pl. 16, fig. 4.—AUD. Orn. Biog. I, 1831, 126; v, 507, pl. 25; Synop. 1839, 120; B. Am. III, 1841, 147, pl. 189.—NUTT. Man. I, 1832, 486.

Melospiza melodia BAIRD, B. N. Am. 1858, 477; Cat. N. Am. B. 1859, No. 227.—COUES, Key, 1872, 139; Check List, 1873, No. 146; B. N. W. 1874, 133.—B. B. & R. Hist. N. Am. B. II, 1874, 19, pl. 27, fig. 6.

HAB. Eastern United States and British Provinces, west to, and including, the Great Plains; wintering from about 50° to the Gulf coast, breeding in northern States and along the Atlantic sea-board. (In western portions of the continent, represented by numerous local or geographical races.)

"SP. CHAR. General tint of upper parts rufous and distinctly streaked with rufous-brown, dark brown and ashy-gray. The crown is rufous, with a superciliary and median stripe of dull gray, the former lighter; nearly white anteriorly, where it sometimes has a faint shade of yellow, principally in autumn; each feather of the crown with a narrow streak of black, forming about six narrow lines. Interseapulars black in the center, then rufous, then pale grayish on the margin, these three colors on each feather very sharply contrasted. Rump grayer than upper tail-coverts, both with obsolete dark streaks. There is a whitish maxillary stripe, bordered above and below by one of dark rufous brown, and with another from behind the eye. The under parts are white; the jugulum and sides of body streaked with clear dark brown, sometimes with a rufous suffusion. On the middle of the breast these marks are rather aggregated so as to form a spot. No distinct white on tail or wings. Length of male, 6.50; wing, 2.58; tail, 3.00. Bill pale brown above; yellowish at base beneath. Legs yellowish.

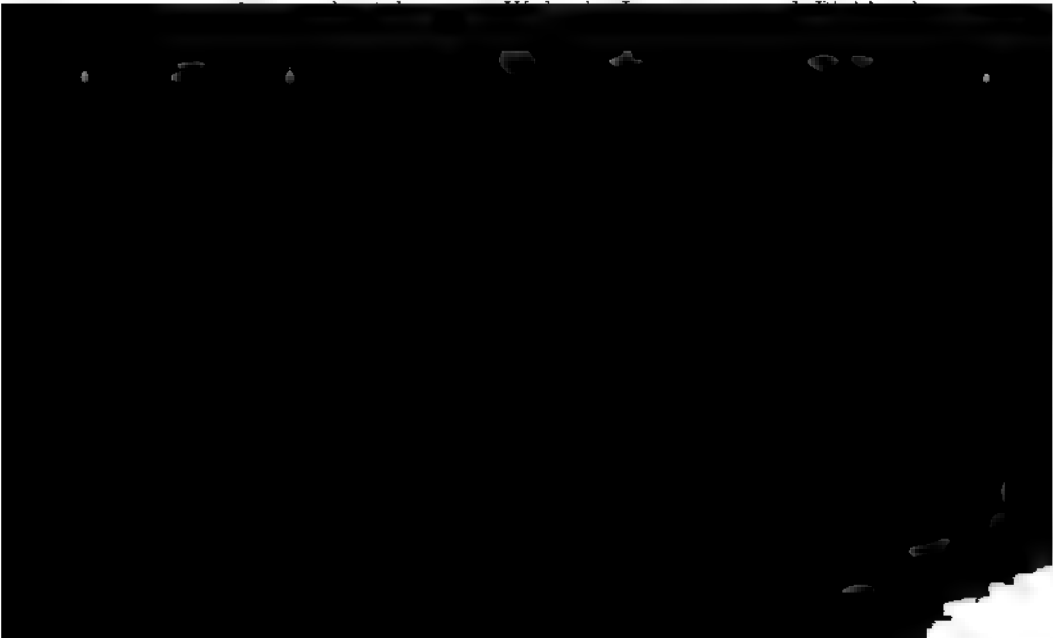
* In western specimens the tail is sometimes half an inch longer.

"Specimens vary somewhat in having the streaks across the breast more or less sparse, the spot more or less distinct. In autumn the colors are more blended, the light maxillary stripe tinged with yellowish, the edges of the dusky streaks strongly suffused with brownish rufous.

"The young bird has the upper parts paler, the streaks more distinct; the lines on the head scarcely appreciable. The under parts are yellowish; the streaks narrower and more sharply defined dark brown." (*Hist. N. Am. B.*)

While the Song Sparrow breeds in the extreme northern part of Illinois, it is known in the more southern portions only as a winter resident. This is somewhat remarkable, since along the Atlantic coast it is one of the most abundant summer residents throughout Maryland and Virginia, in the same latitudes as southern Illinois. The writer has elsewhere (*Proc. Boston Soc. Nat. Hist.* Vol. XVI., 1874, p. 9) called attention to this fact, as follows:

"In southern Iowa, according to Mr. Trippe (*Proc. Boston Soc. Nat. Hist.*, Oct., 1872, p. 237), the Song Sparrow is 'abundant in spring and fall, but not observed to breed. Shy and retiring, a complete contrast to the eastern Song Sparrow.' In southern Illinois this is also the case, the species being there a winter sojourner, abundant, but very retiring, inhabiting almost solely the bushy swamps in the bottom-lands, and unknown as a song bird. The same are also probably its habits throughout Illinois and the adjacent districts. This is a remarkable instance of variation in habits with longitude of one geographical race, since in the Atlantic States it breeds abundantly, as far south at least as the parallel of 38°, and is besides one of the most familiar of the native birds."



family. But this Sparrow is so abundant and so familiar in its habits, that it is better known than most others; it is also very liberal with the supply of music it gives us; and these facts, taken together, undoubtedly have more to do with its popularity than has the quality of its song.

Melospiza lincolni (Aud.)

LINCOLN'S SPARROW.

Popular synonyms. Lincoln's Finch; Lincoln's Song Sparrow.

Fringilla lincolni AUD. Orn. Biog. II, 1834, 539, pl. 193.—NUTT. Man. 2d ed. I, 1840, 569.

Peucaea lincolni AUD. Synop. 1839, 113; B. Am. III, 1841, 116, pl. 177.

Melospiza lincolni BAIRD, B. N. Am. 1858, 462; Cat. N. Am. B. 1859, No. 368.—COUES, Key, 1872, 138; Check List, 1873, No. 167; 2d ed. 1882, No. 242; B. N. W. 1874, 135.—B. B. & R. Hist. N. Am. B. II, 1874, 31, pl. 27, fig. 12.—RIDGW. Nom. N. Am. B. 1881, No. 234.

HAB. Northern North America and higher mountains of western United States, breeding, at high elevations, nearly to the Mexican boundary; thence northward to Alaska (Yukon district) and Labrador, besides various intermediate points; winters in Southern States, Mexico, and Guatemala. (**NOTE.** The distribution of this bird corresponds very closely, at all seasons, with that of *Zonotrichia leucophrys*. In the Yukon and McKenzie River districts, however, instead of the latter it is associated with the *Z. intermedia*,—otherwise their respective distribution is quite identical.)

SP. CHAR. General aspect above, that of *M. melodia*, but paler and less reddish. Crown dull chestnut, with a median and lateral or superciliary ash-colored stripe; each feather above streaked centrally with black. Back with narrow streaks of black. Beneath white, with maxillary stripe curving round behind the ear-coverts; a well-defined band across the breast, extending down the sides, and the under tail-coverts, of brownish yellow. The maxillary stripe margined above and below with lines of black spots and a dusky line behind the eye. The throat, upper part of breast, and sides of the body, with streaks of black, smallest in the middle of the former. The pectoral bands are sometimes paler. Bill above dusky; base of lower jaw and legs yellowish. Length, 5.60; wing, 2.60. (*Hist. N. Am. B.*)

Instead of being the rare bird that it is commonly supposed to be, Lincoln's Sparrow is at times almost as numerous as the Swamp Sparrow; and the fact that it associates freely with the latter species, which it closely resembles in habits and general appearance, may in a measure account for its supposed scarcity. In the southern portion of the State a greater or less number usually pass the winter in company with *M. georgiana*, in the dense brushwood and rank dead herbage of swamps and marshes, in the

BIRDS OF ILLINOIS.

In the northern parts, however, according to Mr. migratory. Mr. Nelson's remarks concerning it are

During the migrations, from May 8th to 20th, and to October 15th. Have seen several specimens during season, and the last of May, 1875, as I was in a patch of weeds, a female started from a few feet of me, while my attention was attracted in another direction with half-spread wings. It was shot, and showed no sign of incubation, but a protracted search for the nest. Specimens were taken in July, 1875, near Mr. Rice."

Melospiza georgiana (Lath.)

SWAMP SPARROW.

Swamp Song Sparrow, Spotted Swamp Sparrow.

LATH. Ind. Orn. i, 1790, 460.—NUTT. Man. i, 1892, 502, 2d ed. i, 1840, 588.

Swamp Sparrow.

Swamp Sparrow. Proc. U. S. Nat. Mus. vii, 1885, 355.

WILS. Am. Orn. iii, 1811, 49, pl. 22, fig. 1.—AUD. Orn. Biog. i, 1831, 331.

In southern Illinois the Swamp Sparrow congregates in immense numbers—perhaps exceeding those of any other species—in the sheltered swamps of the bottom-lands. It breeds in the northern portion of the State, but how far southward its breeding range extends is as yet undetermined. Mr. Nelson records it as being, in Cook county, "an abundant summer resident, far outnumbering *M. melodia*, although to one who has not frequently visited its favorite marshes at all seasons, this would seem improbable. Arrives the last of March and departs the last of October."

The habits of this species are in a great measure similar to those of the Song Sparrow, although it is much less familiar than the last-named species, preferring secluded swamps and marshes rather than parks, gardens, and door-yards. In *History of North American Birds* (Vol. II., pp. 35, 36), Dr. Brewer thus describes its song:

"Except in regard to their song, Wilson's account of their habits, so far as it goes, is quite accurate, although this bird really does have quite a respectable song, and one that improves as the season advances. At first it is only a succession or repetition of a few monotonous, trilling notes, which might easily be mistaken for the song of the Field Sparrow, or even confounded with the feebler chant of the *socialis*, although not so raised as the former, and is much more sprightly and pleasing than the other. Still later its music improves, and more effort is made. Like the Song Sparrow, it mounts some low twig, expands its tail-feathers, and gives forth a very sprightly trill, that echoes through the swampy thicket with an effect which, once noticed and identified with the performer, is not likely to be ever mistaken. Nuttall calls this song loud, sweet, and plaintive. It is to my ear more sprightly than pathetic, and has a peculiarly ventriloquistic effect, as if the performer were at a much greater distance than he really is."

SUBFAMILY PASSERELLINÆ.

CHAR. Toes and claws very stout; the lateral claws reaching beyond the middle of the middle one; all very slightly curved.

"Bill conical, the outlines straight; both mandibles equal; wings long, longer than the even tail, or slightly rounded, reaching nearly to the middle of its exposed portion. Hind claw longer than its digit; the toe nearly as long as the middle toe; tarsus longer than

the middle toe. Brown above, either uniformly so or faintly streaked; triangular spots below.

"This section embraces a single North American genus, chiefly characterized by the remarkable elongation of the lateral claws, as well as by the peculiar shape and large size of all the claws; the lateral, especially, are so much lengthened as to extend nearly as far as the middle. The only approach to this, as far as I recollect, among United States *Conirostres*, is in *Pipilo megalonyx*, and *Xanthocephalus icterocephalus*. (*Hist. N. Am. B.*)

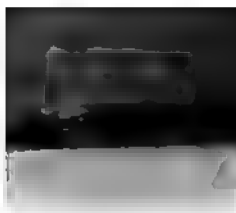
GENUS *PASSERELLA* SWAINSON.

Passerella SWAINSON, *Class. Birds*, ii, 1837, 238. Type, *Fringilla iliaca* MERREM.

"GEN. CHAR. Body stout. Bill conical, not notched, the outlines straight; the two jaws of equal depth, roof of upper mandible deeply excavated, and vaulted; not knobbed. Tarsus scarcely longer than the middle toe; outer toe little longer than the inner its claw reaching to the middle of the central one. Hind toe about equal to the inner lateral; the claws all long, and moderately curved only; the posterior rather longer than the middle, and equal to its toe. Wings long, pointed, reaching to the middle of the tail; the tertials scarcely longer than secondaries; second and third quills longest; first equal to the fifth. Tail very nearly even, scarcely longer than the wing. Inner claw contained scarcely one and a half times in its toe proper.

"Color. Rufous or slaty; obsoletely streaked or uniform above; thickly spotted with triangular blotches beneath." (*Hist. N. Am. B.*)

A single species of this genus belongs to North America. It is represented in the West by *P. schistacea*, BAIRD, in the Rocky Mountains and west to the Sierra Nevada; by *P. megarhyncha*, BAIRD, in the southern portion of the Pacific coast ranges, and by *P. unalaschcensis* (GMEL.) along the more northern portion of the Pacific Coast. All these forms intergrade rather with one another or



Passerella iliaca Sw. 1837.—BAIRD, B. N. Am. 1868, 488; Cat. N. Am. B. 1869, No. 374.—

COUES, Key, 1872, 147; Check List, 1874, No. 188; 2d ed. 1882, No. 282; B. N. W. 1874, 169.

—B. B. & B. Hist. N. Am. B. II, 1874, 59, pl. 78, fig. 2.—RIDGW. Nom. N. Am. B. 1881, No. 236.

Fringilla ferruginea GMELL. S. N. I, 1788, 921.

Fringilla rufa WILS. Am. Orn. II, 1811, 53, pl. 23, fig. 4.

HAB. Northern North America, including Alaska (except coast from Kodiak eastward); breeding in arctic and subarctic districts, and southeastward to mouth of the St. Lawrence; in winter eastern United States, chiefly south of 40°.

"SP. CHAR. General aspect of upper parts foxy red, the ground-color and the sides of neck being ashy; the interscapular feathers each with a large blotch of fox-red; this color glossing the top of head and nape, sometimes faintly, sometimes more distinctly; the rump unmarked; the upper coverts and surface of the tail continuous fox-red. Two narrow white bands on the wing. Beneath, with under tail-coverts and axillars, clear white; the sides of head and of throat, the jugulum, breast, and sides of body, conspicuously and sharply blotched with fox-red; more triangular across breast, more linear and darker on sides. Sometimes the entire head above is continuously reddish. First quill rather less than fifth. Hind toe about equal to its claw. Length, 7.50; wing, 3.50; tail, 2.90; tarsus, .57; middle toe, without claw, .67; hind claw, .35." (Hist. N. Am. B.)

In summer, the ash is more predominant above; in winter, it is overlaid more or less by a wash of rufous, as described above.

Young, first plumage ("P. obscura" VERRILL). "Color above rufous brown, becoming bright rufous on the rump and exposed portion of the tail, but a shade darker than in *P. iliaca*; head uniform brown, with a slight tinge of ash; feathers of the back centred with a streak of darker brown. Wings nearly the same color as the back, with no white bands; outer webs of the quills rufous, inner webs dark brown; secondary coverts rufous, with dark brown centres; primary coverts uniform brown. Beneath dull white, with the throat and breast thickly covered with elongated triangular spots and streaks of dark reddish brown; sides streaked with rufous brown; middle of abdomen with a few small triangular spots of dark brown; under tail-coverts brownish white, with a few small spots of bright rufous; the tibiae dark brown. The auriculars are tinged with reddish brown. Bristles at the base of the bill are numerous, extending over the nostrils. Tail rather long, broad, and nearly even. Third quill longest; second and fourth equal, and but slightly shorter; first intermediate between the fifth and sixth, and one fourth of an inch shorter than the third.

"Length, 6.75; extent of wings, 10.75; wing, 3.35; tarsus, 1 inch."

This stage is stated to be "darker in all parts; the feathers of the back are rufous brown, centred with darker, instead of ash centred with brownish red; the two white bands on the wing are wanting; the breast and throat are thickly streaked with elongated spots of dark reddish brown, while in *P. iliaca* the spots are less numerous, shorter and broader, and bright rufous, and the central part of the throat is nearly free from spots; the under tail-coverts are brownish white, with rufous spots, instead of nearly pure white."

This fine Sparrow, distinguished, as its name indicates, by its bright rufous coloring, is a winter resident in the southern and a migrant in the northern portions of the State. It inhabits the densest thickets where, in company with the Chewink, Cardinal, and other species, it passes much of its time on the ground, scratching among the dead leaves for its food. Its breeding range is essentially identical with that of the Snowbird (*Junco hyemalis*). Those who have heard his song in his summer home

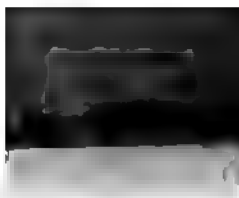
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a very fine performance. Snatches of this song may be heard in the spring before the northward exodus, but at this season certainly are remarkable for their beauty. *History of North American Birds* (Vol. II., p. 52), describes the full song: "In the spring the male is musical, and is one of our sweetest and most regular singers. His voice is loud, clear, and melodious; his notes are varied; and his song is unequaled by any of this class I have ever heard."

SUBFAMILY SPIZINÆ.

Bill, always large, much arched, and with the culmen considerably more of a horn size, and with a greater development backward of the base than in the first group, sometimes considerably broader behind than in the first group. Tail rather variable. Bill generally black. Wings shorter than in the first group. Gape almost always much smaller than in the first group. Few of the species sparrow-like or plain in their appearance; many are black and white; except in one or two instances the sexes very dif-

ferent. The following diagnosis is intended to embrace the brightly colored birds of North America, different in general appearance from the common Sparrows. It is difficult to draw the line of strictness, so as to separate the species from those of the first group, but the bill is always more curved, as well as the gape is smaller. They resemble quite closely, at



a. Size large (wing more than 3.50 inches)

Habia. Upper mandible much swollen laterally. Colors: no blue; upper parts conspicuously different from the lower. Wings and tail with white patches; axillars and lining of wing yellow or red. Female streaked. Nest in a tree or bush; eggs greenish, thickly spotted.

Guiraca. Upper mandible flat laterally. Colors: *Male* deep blue, with two rufous bands on wings; no white patches on wings or tail; axillars and lining of wing blue; *female* olive-brown without streaks. Nest in a bush; eggs plain bluish white.

b. Size very small (wing less than 3.00 inches).

Passerina. Similar in form to *Guiraca*, but culmen more curved, mandible more shallow, the angle and sinuations of the commissure less conspicuous. Color: *Males* more or less blue, without any bands on wing (except in *C. amana*, in which they are white); *female* olive-brownish. Nest in a bush; eggs plain bluish white (except in *C. ciris*, in which they have reddish spots).

B. Wing and tail about equal. The smallest of American *Conirostres*. Nest in bushes. Eggs white, spotted.

Sporophila. Bill very short and broad, scarcely longer than high, not compressed; culmen greatly curved. Color chiefly black and white, or brown and gray.

Eutheta. Bill more triangular, decidedly longer than deep, much compressed; culmen only slightly curved, or perfectly straight. Colors dull olive-green and blackish, with or without yellow about the head.

C. Wing much shorter than the tail.

a. Head crested. Prevailing color red. Bill red, orange, yellow, or whitish.

Pyrrhuloxia. Bill pyrrhuline, very short, and with the culmen greatly convex; shorter than high. Hind claw less than its digit; not much larger than the middle anterior one. Tarsus equal to the middle toe. Nest in bush or low tree; eggs white, spotted with lilac and olive.

Cardinalis. Bill coccythraustine, very large; culmen very slightly convex. Wings more rounded. Feet as in the last, except that the tarsus is longer than the middle toe. Nest in bush or low tree; eggs white, spotted with lilac and olive.

b. Head not crested. Colors black, brown, or olive, without red. Bill dusky, or bluish.

Pipilo. Bill moderate; culmen and commissure curved. Hind claw very large and strong; longer than its digit. Tarsus less than the middle toe. Nest on ground or in low bush; eggs white sprinkled with red, or pale blue with black dots and lines around larger end.

GENUS PIPILO VIEILLLOT.

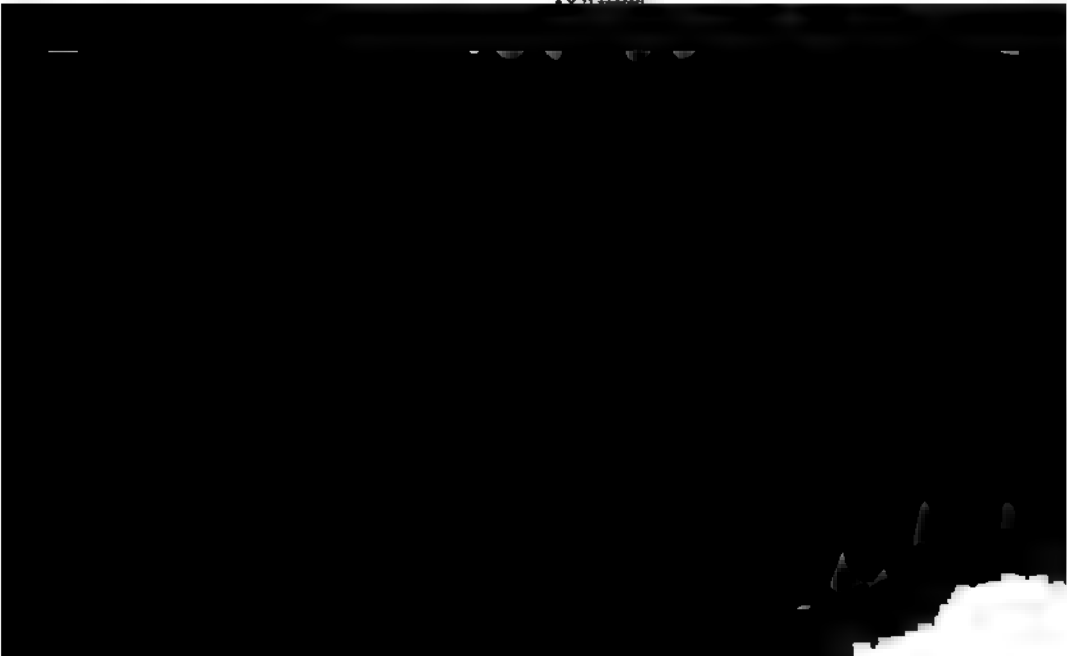
Pipilo VIEILLLOT, Analyse, 1816, 32. Type, *Fringilla erythrophthalma* LINN.

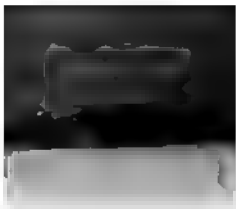
"GEN. CHAR. Bill rather stout; the culmen gently curved, the gonys nearly straight, the commissure gently concave, with a decided notch near the end; the lower jaw not so deep as the upper; not as wide as the gonys is long, but wider than the base of the upper mandible. Feet large, the tarsus as long as or a little longer than the middle toe; the outer lateral toe a little the longer, and reaching a little beyond the base of the middle claw. The hind claw about equal to its toe, the two together about equal to the outer toe. Claws all stout, compressed, and moderately curved; in some western specimens the claws much larger. Wings reaching about to the end of the upper tail-coverts; short and rounded, though the primaries are considerably longer than the nearly equal secondaries and tertials; the outer four quills are graduated,—the first considerably shorter than the second, and about as long as the secondaries. Tail considerably longer than the wings, moderately graduated externally; the feathers rather broad, most rounded off on the inner webs at the end. The colors vary; the upper parts are generally uniform black or brown, sometimes olive; the under white or brown; no central streaks on the feathers. The hood sometimes differently colored." (*Hist. N. Am. B.*)

As in the case of *Passerella*, this genus has a single eastern representative, with several western congeneric, if not conspecific, forms. *Pipilo*, however, reaches its maximum development in Mexico, where are special species not found elsewhere. One of these Mexican species (*P. maculatus*, Swains.) passes by gradual transition into *P. arcticus*, Swains., on the eastern slope of the Rocky Mountains, and *P. megalonyx*, Baird, on the western side of the same range. The latter gradually blends into *P. oregonus*, Bell, in the northern coast range of California, and the excessively humid, densely wooded Pacific water-shed to the northward. An approach to an intergradation between *P. arcticus* and the eastern *P. erythrophthalmus* was first noted by Professor Baird, in "Birds of North America," p. 518, where mention is made of a specimen from Fort Leavenworth, Kansas, which had "a few white spots on the scapulars only, the wing-coverts without them, exhibiting an approach to *P. arcticus*." On this basis the conspecific relation of the two forms has been argued by at least one author; but the circumstance that two examples of similar character (one of them even more distinctly spotted than the Fort Leavenworth specimen) have been obtained in the vicinity of Washington, D. C., shows how slow we should be to base so important a conclusion upon a fact of this character, however suggestive it may be. Many mistakes of the kind have been made by thus assuming intergradation without sufficient evidence to support the assumption.

***Pipilo erythrophthalmus* (Linn.)**

TOWHEE.





streaked externally with black. Feathers of throat white in the middle. Under tail-coverts similar to sides, but paler. Edges of outer six primaries with white at the base and on the middle of the outer web. Inner two tertiarials also edged externally with white. Tail feathers black; outer web of the first, with the ends of the first to the third, white, decreasing from the exterior one. Outermost quill usually shorter than ninth, or even than secondaries; fourth quill longest, fifth scarcely shorter. Iris red; said to be sometimes paler, or even white, in winter. Length, 8.75; wing, 3.75; tail, 4.10. Bill black; legs flesh-color. *Female* with black replaced by a rather rufous brown."

"The tail feathers are only moderately graduated on the sides; the outer about .40 of an inch shorter than the middle. The outer tail-feather has the terminal half white, the outline transverse; the white of the second is about half as long as that of the first; of the third half that of the second. The chestnut of the sides reaches forward to the back of the neck, and is visible when the wings are closed.

"A young bird has the prevailing color reddish olive above, spotted with lighter; beneath brownish white, streaked thickly with brown." (*Hist. N. Am. B.*)

Next to the splendid Cardinal, the Chewink is decidedly the finest of our terrestrial Fringillidæ, and in some respects is, perhaps, the most attractive of all. Without brilliant or gaudy coloring, his plumage is yet handsome by reason of its bold contrasts. His notes possess a peculiar charm, and notwithstanding his abode is in the thickets of the wildwood and the remote corners of the farm, no bird is more confiding in the presence of man.

The distribution of this species within the State is very general, thickets only being a condition of its presence. In the southern portion it is a permanent resident, but northward it departs in winter.

"Thickets, bushy pastures and barren tracts on the higher grounds are the favorite resorts of this species. It comes early, reaching the Middle States in April. The bottom poles of an old rail fence, among the briars by the woods, is very likely to be its thoroughfare; and at all times it keeps for the most part on or near the ground. Sit down quietly in the thicket, and you will hear its sharp rustle, as it scratches among the dry leaves,—this hen-like scratching, probably in search of food, being one of its marked characteristics of habit. As it flits from bush to bush, never flying far nor high, you can hear the *whir-r-r-r* of its short, rounded, concave wings, and as it opens its long, fan-like tail with a jerking motion, the white markings contrast strongly with the jet-black figure. It hops, and sidles, and dodges about, in and out through

one syllable, thus rendering either of these words become its common names, very distinctly; but in or exact effect, the words must be pronounced just so,—an emphasis and intonation." ("Our Birds in their 577, 578.)

GENUS **CARDINALIS** BONAPARTE.

Cardinalis BONAPARTE, P. Z. S. 1837, 11. Type, *Loxia cardinalis* LINN

"GEN. CHAR. Bill enormously large; culmen very slightly curved, coated; lower jaw broader than the length of the gonys, considerably wider jaw, about as deep as the latter. Tarsi longer than middle toe; outer longer, reaching a little beyond the base of the middle one; hind toe not moderate, reaching over the basal third of the exposed part of the tail. Fe graduated; the first equal to the secondaries. Tail long, decidedly longer considerably graduated; feathers broad, truncated a little obliquely at the ends rounded. Color red [in adult male]. Head crested.

"The essential characters of this genus are the very large and thick bill, extending far back on the forehead; only moderately curved above; tarsus longer than middle toe; graduated wings, the first primary equal to the second; the long tail exceeding the wings, broad and much graduated to the end." (*Hist. N. Am. B.*)

Only one species in eastern North America, and in the west, except along the southern border, where two geographical forms, *C. cardinalis superbus*, RIDGW., and *C. igneus*, BAIRD, occur and at Cape St. Lucas respectively. In eastern Mexico (*C. coccineus*, RIDGW., replaces *C. cardinalis* proper and the latter, however, being the only form in western Mexico. species, *C. carneus*, LESS., belongs to the western hemisphere America (American Ornithology).

Cardinalis cardinalis (Linn.)**CARDINAL.**

Popular synonyms. Redbird; Crested Redbird; Top-knot Redbird; Cardinal Grosbeak; Cardinal Redbird; Corn-cracker; Virginian Redbird; Virginia Nightingale.

Loxia cardinalis LINN. S. N. ed. 10, i, 1758, 172; ed. 12, i, 1766, 300.—WILS. Am. Orn. ii, 1816, 38, pl. 6, figs. 1, 2.

Fringilla cardinalis BP. 1828.—NUTT. Man. i, 1832, 519. AUD. Orn. Biog. ii, 1834, 336, pl. 152.

Pitylus cardinalis AUD. Synop. 1839, 131; B. Am. iii, 1841, 198, pl. 203.

Cardinalis virginianus BP. List, 1838, 35.—BAIRD, B. N. Am. 1858, 509; Cat. N. Am. B. 1859, No. 390.—COUES, Key, 1872, 151; Check List, 1874, No. 203; 2d ed. 1882, No. 299; B. N. W. 1874, 172.—B. B. & R. Hist. N. Am. B. ii, 1874, 100, pl. 93, figs. 6, 7.—RIDGW. Nom. N. Am. B. 1881, No. 242.

HAB. Eastern United States, chiefly south of 40°, but occasionally in New York, Connecticut, Massachusetts, etc.; west to Nebraska, Kansas, Indian Territory, and Texas. Resident wherever found.

SP. CHAR. *Adult male.* Uniform vermilion-red, pure beneath, darker and more brownish above. Lores, anterior portion of malar region, chin, and throat, black, this color meeting across forehead at base of culmen. Bill bright vermilion; iris brown; feet horn-color. *Adult female.* Bill, eyes, and feet as in the male. Red of head and body replaced by olive-gray above, and grayish buff or pale fulvous below, the crest, sometimes also the breast, tinged with red. Black of throat, etc., replaced by grayish. *Young.* Bill dusky. Plumage much as in the adult female, but browner.

Male. Total length, 8.75-9.25 inches; extent, 11.10-12.25; wing, 3.75-4.05; tail, 4.10-4.65; culmen, .75; depth of bill at base, .58-.65.

Female. Total length, 8.25-8.45; extent, 11.25-11.50; wing, 3.40-3.60; tail, 3.85-4.40.

The Cardinal Grosbeak is truly one of the glories of our bird-fauna, being unapproachable in the combination of proud bearing and gaudy coloring, and unexcelled in certain qualities of song. Many writers have pronounced his song monotonous, but these have certainly not heard him at his best. The verdict is undoubtedly a just one when applied to many that we have heard; but there is probably more individual variation in quality of song in this bird than in any other. We have listened with peculiar pleasure to some whose vocal performance was characterized by a clearness and mellow richness of tone, a tender and passionate expression, and persistent vigor, that together were wholly unique. Even the females are good singers, though, as a rule, inferior to the males, and it is extremely probable that the impressions which some writers have received were derived from the songs of birds of this sex.

In the southern portion of the State, few birds are more abundant, it being a common thing in some localities to hear several males singing in earnest rivalry; and the writer has at one time

seen three males and two females near together, picking up corn which had been dropped upon a railroad track from a passing train. Except possibly in the extreme northern portion of the State it is a permanent resident, being apparently not affected in the least by changes in the weather.

GENUS **HABIA** REICHENBACH.

Habia REICH. Syst. Av. June 1, 1850, p. lxxviii. Type *Guiraca melanocephala* SWAINSON.

Hedymeles CABAN. Mus. Hein. i. 1851, 153. Type *Loxia ludoviciana* LINN.

Zamelodia COTTS. Bull. Nutt. Orn. Club, v. April, 1880, 90. Same type.

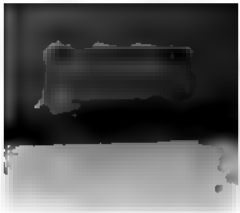
"GEN. CHAR. Bill very large, much swollen; lower mandible scarcely deeper than the upper; feet almost *coccothraustine*; tarsi and toes very short, the claws stronger and much curved, though blunt. First four primaries longest, and nearly equal, abruptly larger than the fifth. Tail broad, perfectly square. Colors: Black, white and red, or black, cinnamon, yellow, and white, on the male; the females brownish, streaked, with the axillars and lining of the yellow." (*Hist. N. Am. B.*)

The only known species of this genus are North American and may be distinguished as follows:

COMMON CHARACTERS. *Males.* Head and upper parts (except rump) deep black. Two broad bands across coverts, a large patch on base of primaries, and terminal half of inner webs of tail-feathers, pure white. Breast carmine or cinnamon; axillars and lining of wing carmine or gamboge. *Females.* Black replaced by ochraceous brown; other parts more streaked.

H. ludoviciana. Rump and lower parts white; lining of wing, and patch on breast, rosy carmine. No nuchal collar. *Female.* Lining of wing saffron-yellow; breast with numerous streaks. *Hab.* Eastern Province of North America, south, in winter, to Ecuador.

H. melanocephala. Rump and lower parts cinnamon; lining of wing and middle of abdomen gamboge-yellow. A nuchal collar of cinnamon. *Female.* Lining of wing lemon-yellow; breast without streaks; abdomen tinged with lemon-yellow.



HAB. Eastern temperate North America, breeding from about 48° (approximately) north to Labrador and the Saskatchewan; winters in Cuba, eastern Mexico, Central America, and northern South America, as far as Ecuador.

SP. CHAR. Upper parts generally, with head and neck all round, glossy black. A broad crescent across the upper part of the breast, extending narrowly down to the belly, axillaries, and under wing-coverts, carmine. Rest of under parts, rump, and upper tail-coverts, middle wing-coverts, spots on the tertiaries and inner great wing-coverts, basal half of primaries and secondaries, and a large patch on the ends of the inner webs of the outer three tail-feathers, pure white. Length, 8.50 inches; wing, 4.15.

Female without the white of quills, tail, and rump, and without any black or red. Above yellowish brown streaked with darker; head with a central stripe above, and a superciliary on each side, white. Beneath dirty white, streaked with brown on the breast and sides. Under wing-coverts and axillars saffron-yellow.

In the male the black feathers of the back and sides of the neck have a subterminal white bar. There are a few black spots on the sides of the breast just below the red.

The young male of the year is like the female, except in having the axillaries, under wing-coverts, and a trace of a patch on the breast, light rose-red.

The depth of the carmine tint on the underparts varies a good deal in different specimens, but it is always of the same rosy hue." (*Hist. N. Am. B.*)

As may be conjectured from its name, the Rose-breasted Grosbeak is a lovely bird, the fully adult male being decked with a tricolored plumage of deepest black, purest white, and richest rose-red. In the southern portion of the State the species is transient, passing rather hurriedly through in spring and fall; but in the northern portions (perhaps more than the northern half), it is a summer resident. The Rose-breasted Grosbeak is even more remarkable for its beautiful song than for its richness of plumage, and is therefore, and also on account of other qualities which commend it, highly prized as a cage-bird. Says Dr. Brewer:*

"Dr. Hoy, of Racine, supplies some interesting information in regard to the habits and nesting of this species. On the 15th of June, within six miles of that city, he found seven nests, all within a space of not over five acres, and he was assured that each year they resort to the same locality and nest thus socially. Six of these nests were in thorn-trees, all within six to ten feet from the ground, and all were in the central portion of the top. Three of the four parent birds sitting on the nests were males, and this he was told was usually the case. When a nest was disturbed, all the neighboring Grosbeaks gathered around and appeared equally interested. Both nest and eggs so closely resemble those of the Tanagers that it is difficult to distinguish them. Their position is, however, usually different, the Grosbeaks generally nesting in the central portion of a small tree, the Tanagers being placed on a horizontal limb."

**Hist. N. Am. B.* vol. II, pp. 72, 73.

Nor is the Rose-breasted Grosbeak purely an ornamental bird. On the other hand he is one of the most useful that we have as a destroyer of noxious insects. In many parts of the Mississippi Valley he is known as the "Potato-bug Bird," from the fact that he is particularly fond of that most disastrous pest of the farmer.

GENUS *GUIRACA* SWAINSON.

Guiraca SWAINSON, Zool. Jour. III, Nov. 1827, 356. Type, *Loxia cerulea* LINN.

"GEN. CHAR. Bill very large, nearly as high as long; the culmen slightly curved with a rather sharp ridge; the commissure conspicuously angulated just below the nostril, the posterior leg of the angle nearly as long as the anterior, both nearly straight. Lower jaw deeper than the upper, and extending much behind the forehead; the width greater than the length of the gonys, considerably wider than the upper jaw. A prominent knob in the roof of the mouth. Tarsi shorter than the middle toe; the outer toe a little longer, reaching not quite to the base of the middle claw; hind toe rather longer than to this base. Wings long, reaching to the middle of the tail; the secondaries and tertials nearly equal; the second quill longest; the first less than the fourth. Tail very nearly even, shorter than the wings." (*Hist. N. Am. B.*)

Guiraca cerulea (Linn.)

BLUE GROSBEEK.

Loxia cerulea LINN. S. N. ed. 10, i, 1758, 175; ed. 12, i, 1766, 306.—WILS. Am. Orn. III, 1811, 78, pl. 34, fig. 4.

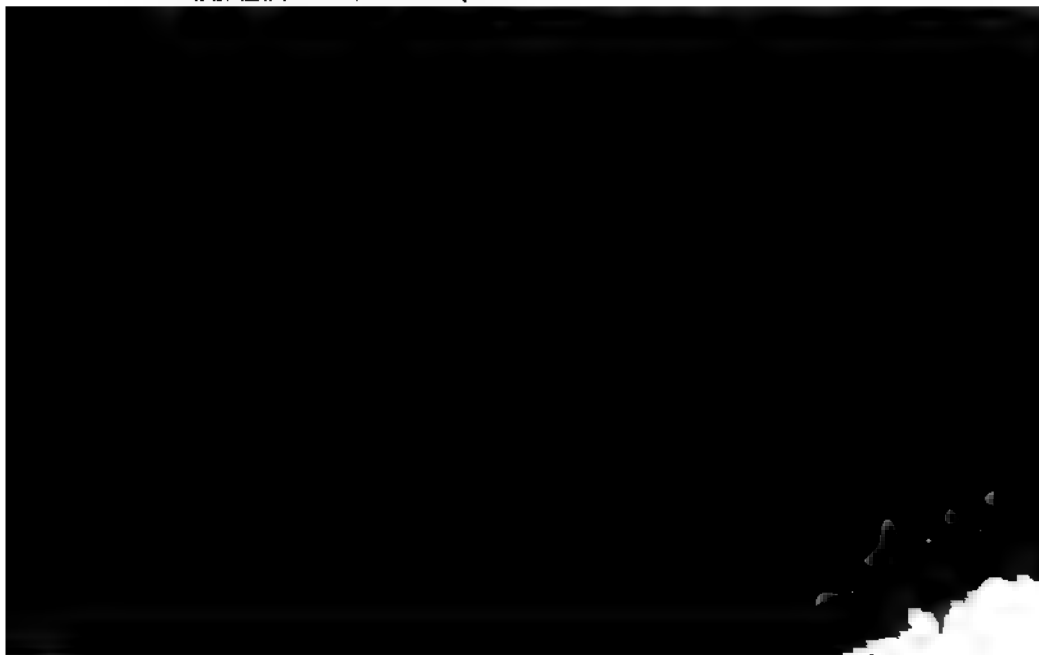
Guiraca cerulea SWAINSON, 1827.—BAIRD, B. N. Am. 1858, 499; Cat. N. Am. B. 1859, No. 383.

—B. B. & R. Hist. N. Am. B. ii, 1874, 77, pl. 29, figs. 4, 5.—RIDGW. Nom. N. Am. B. 1861, No. 246.—COUES, 2d Check List, 1882, No. 291.

Fringilla cerulea "ILL." LICHT. Preis-Verz. 1823, 22.—AUD. Synop. 1839, 132.

Goniaphia cerulea SCL. 1856.—COUES, Key, 1872, 149; Check List, 1874, No. 195; B. N. W. 1874, 169.

HAB. Southern United States, from Atlantic to Pacific (very local, and irregularly distributed); north to Kansas, Illinois, Pennsylvania, and Connecticut (occasionally) or even to Maine and Canada (accidentally).



"Autumnal and winter males have the feathers generally, especially on the back and breast, tipped with light brown, obscuring somewhat the blue, though producing a beautiful appearance." (*Hist. N. Am. B.*)

So far as we know from the published records, and according to the author's experience, the Blue Grosbeak would appear to be a rare bird in Illinois, even in the southern part of the State. This, considering the fact that it is not uncommon in other portions of the country in the same latitudes, both along the Atlantic coast and in the interior, as well as in California, is inexplicable, unless to be accounted for by the supposition that it has been overlooked by collectors or that it may be not uncommon in portions of the State where no ornithological investigations have been made. That both explanations are in a measure correct is extremely probable; for not only is the Blue Grosbeak a very local bird, but it is also, notwithstanding its size, a very inconspicuous one. Unless seen under the most favorable circumstances the adult male does not appear to be blue, but of an ill-defined dusky color, and may easily be mistaken for a Cow Blackbird (*Molothrus ater*) unless most carefully watched; besides, they usually sit motionless, in a watchful attitude, for a considerable length of time, and thus easily escape observation.

The Blue Grosbeak frequents much the same localities as those selected by the Indigo Bird and Field Sparrow, viz., the thickets of shrubs, briars and tall weeds lining a stream flowing across a meadow or bordering a field, or the similar growth which has sprung up in an old clearing. The usual note is a strong harsh *ptchick*, and the song of the male a very beautiful, though rather feeble, warble, somewhat like that of the Purple Finch, but bearing a slight resemblance also to that of the Rose-breasted Grosbeak. The nest and eggs are like a larger "edition" of those of the Indigo Bird. At least two broods are raised during a season, the writer having found a brood of young, just beginning to fly, on the 13th of September, in Fairfax county, Virginia, where the species was somewhat common.

GENUS *PASSERINA* VIEILLOT.

Passerina VIEILLOT, Analyse, 1816, 30. Type, *Tanagra cyanea* LINN.
Cyanospiza BAIRD, B. N. Am. 1853, 500. Same Type.

"GEN. CHAR. Bill deep at the base, compressed; the upper outline considerably curved; the commissure rather concave, with an obtuse, shallow lobe in the middle. Gonys slightly curved. Feet moderate; tarsus about equal to middle toe; the outer lateral toe barely longer than the inner, its claws falling short of the base of the middle; hind toe about equal to the middle without claw. Claws all much curved, acute. Wings

BIRDS OF ILLINOIS.

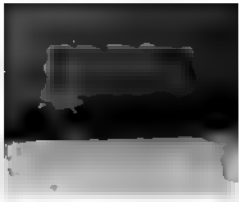
... long nearly to the middle of the tail; the second and third quills only shorter than the wings; rather narrow, very nearly even. ... are all of very small size, and of showy plumage, usually ... The females plain olivaceous or brownish; ...

... of this genus which have been known to occur ... Province of the United States may be distinguished ... characters:

...
Male: Head, neck, and upper parts verditer-blue, duller on the back; ... the other lower parts white. *Female*: Above grayish ... with blue; beneath fulvous-white, the breast more buffy.
Male: Uniform rich greenish cobalt-blue, the head more ultramarine. *Female*: Above dull brown, below brownish white, the breast ... streaks.
Male: ... of upper mandible very concave, and culmen much ... rump and forehead purplish blue, eyelids and ... *Female*: Above grayish brown, beneath brownish white.
Male: Eyelids and lower parts vermillion-red; rest of head purplish ... yellowish green; rump dull red. *Female*: Dull grass-green ... beneath. (Young male similar.)

Passerina cyanea (Linn.)

INDIGO BUNTING.



This exquisite little bird, so inappropriately named *Indigo Bird*—for the blue color of the male is not at all like the color of indigo, but on the contrary is the richest cerulean-blue, shading into ultramarine,—is one of our most abundant and most generally distributed summer residents. It is an associate of the Field Sparrow, Maryland Yellow-throat, Yellow-breasted Chat, and other birds which frequent thickets about the borders of fields, and its sprightly and vigorous, though somewhat harsh song is heard throughout the sultry days of summer, as the singer occupies a prominent position on the summit of a tree, or, as is frequently the case, on a telegraph wire along a railroad.

Passerina ciris (Linn.)

PAINTED BUNTING.

Popular synonyma. Painted Finch; Nonpareil.

Emberiza ciris LINN. S. N. ed. 10, i, 1758, 177; ed. 12, i, 1766, 313.

Fringilla ciris WILS. Am. Orn. iii, 1811, 63, pl. 24, figs. 1, 2.—AUD. Orn. Biog. i, 1832, 279; v, 517, pl. 53.

Passerina ciris VIEILL. Gal. Ois. i, 1824, 61, pl. 66.—RIDGW. Nom. N. Am. B. 1881, No. 251.—COUES, 2d Check List, 1892, No. 392.

Spiza ciris AUD. Synop. 1839, 108; B. Am. iii, 1841, 93, pl. 100.

Cyanospiza ciris BAIRD, B. N. Am. 1858, 503; Cat. N. Am. B. 1859, No. 384.—COUES, Key, 1872, 149; Check List 1874, No. 194.—B. B. & R. Hist. N. Am. B. ii, 1874, 67, pl. 29, figs. 7, 8.

HAB. Southern Atlantic and Gulf States, north to South Carolina and southern Illinois, west to Arizona; south in winter to Panama.

SP. CHAR. Male. Head and neck all around ultramarine blue, excepting a narrow stripe from the chin to the breast, which, with the under parts generally, the eyelids, and the rump (which is tinged with purplish), are vermillion-red. Edges of chin, loreal region, greater wing-coverts, inner tertiary, and interscapular region, green; the middle of the latter glossed with yellow. Tail-feathers, lesser wing-coverts, and outer webs of quills, purplish blue. Length about 5.50 inches; wing, 2.76.

Female. Clear dark green above; yellowish beneath. **Young,** like female.

"Tail very slightly emarginated and rounded; second, third, and fourth quills equal; first rather shorter than the fifth.

"The female is readily distinguishable from that of *P. cyanea* by the green instead of the dull brown of the back, and the yellow of the under parts." (*Hist. N. Am. B.*)

The plumage of the Nonpareil, although brilliant, can scarcely be called beautiful, since there is an entire lack of harmony in his tints. The name *Painted Bunting* is therefore peculiarly appropriate,

the juxtaposition of noncomplimentary colors—green, blue, and red strongly suggesting the inartistic “daubing” of a juvenile would-be artist.

So far as the records are concerned, this species claims a place in the Illinois fauna, from the circumstance that a female was seen by the writer on June 10, 1871, close by the roadside, in Wabash county, and under circumstances which allow of no doubt as to correct identification. The date and also the character of the locality suggest the possibility, if not probability, that a pair were breeding in that vicinity. It will doubtless yet be found breeding in the more southern portions of the State.

The eggs of this species are very different from those of the Indigo Bird, being heavily spotted round the larger end with reddish brown.

GENUS *SPIZA* BONAPARTE.

Spiza BONAP. Jour. Phil. Ac. iv, pt. i, Aug. 1824, 45.—Type, *Emberiza americana* GMEL.

Euspiza BONAP. Saggio, 1832, 141. Same type.

Euspiza CABAN. Mus. Hein. i, May, 1851, 133. Same type.

“GEN. CHAR. Bill large and strong, swollen, and without any ridges; the lower mandible nearly as high as the upper; as broad at the base as the length of the gonys, and considerably broader than the upper mandible; the edges much inflexed, and shutting much within the upper mandible; the commissure considerably angulated at the base, then decidedly sinuated. The tarsus barely equal to the middle toe; the lateral toes nearly equal, not reaching to the base of the middle claw; the hind toe about equal to the middle one without its claw. The wings long and acute, reaching nearly to the middle of the tail; the tertials decidedly longer than the secondaries, but much shorter than the

SPECIES.

S. americana. Top and side of head light slate, or ash-gray; forehead tinged with greenish yellow. A superciliary stripe, a malar spot, side of breast, and middle line of breast and belly, yellow. Chin white, throat black, shoulders chestnut. Female with the black of the throat replaced by a crescent of spots. *Hab.* Eastern Province of United States; south in winter to New Granada.

S. townsendi. Body throughout (including the jugulum), dark ash, tinged with brownish on the back and wings. Superciliary and malar stripes, chin, throat, and middle of belly, white. A submalar line and a pectoral crescent of black spots. No chestnut on shoulders. *Hab.* Chester county, Pennsylvania.

Spiza americana (Linn.)

DICK CUSSEL.

Popular synonyms. Black-throated Bunting; Little Field Lark; Little Meadowlark.

Emberiza americana Gmel. S. N. 1, 1783, 571.—Wils. Am. Orn. 1, 1808, 411; iii, 1811, 86, pl. 8, fig. 2.—Nutt. Man. 1, 1832, 461.—Aud. Orn. Biog. iv, 1838, 579, pl. 384; Synop. 1839, 101; B. Am. iii, 1841, 58, pl. 158.

Euspiza americana Bp. 1838.—Baird, B. N. Am. 1838, 494; Cat. N. Am. B. 1859, No. 378.—Cours. Key, 1872, 148; Check List, 1874, No. 191; B. N. W. 1874, 166; B. B. & R. Hist. N. Am. B. ii, 1874, 65, pl. 28, figs. 11, 12.

Spiza americana Ridgw. Nom. N. Am. B. No. 254.—Cours, 2d Check List, 1882, No. 287.

HAB. Eastern United States in summer, north to Connecticut and Massachusetts (rarely); west to the Great Plains, and, during migration, to Arizona. Winters within the Tropics, as far south as Colombia.

"SP. CHAR. Male. Sides of the head, and sides and back of the neck ash; crown tinged with yellowish green and faintly streaked with dusky. A superciliary and short maxillary line, middle of the breast, axillaries, and edge of the wing yellow. Chin, loreal region, patch on side of throat, belly, and under tail-coverts white. A black patch on the throat diminishing to the breast, and ending in a spot on the upper part of the belly. Wing-coverts chestnut. Interscapular region streaked with black; rest of back immaculate. Length, about 6.70; wing, 3.50.

"Female with the markings less distinctly indicated; the black of the breast replaced by a black maxillary line and streaked collar in the yellow of the upper part of the breast.

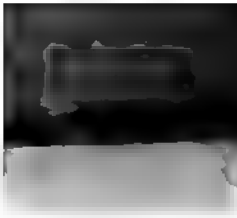
"Among adult males, scarcely two individuals exactly alike can be found. In some the black of the throat is continued in blotches down the middle of the breast, while in others it is restricted to a spot immediately under the head. These variations are not at all dependent upon any difference of habitat, for specimens from remote regions from each other may be found as nearly alike as any from the same locality." (*Hist. N. Am. B.*)

While some other birds are equally numerous, there are few that announce their presence as persistently as this species. All day long, in spring and summer, the males, sometimes to the number of a dozen or more for each meadow of considerable extent, perch

upon the summits of tall weed-stalks or fence-stakes, at short intervals crying out: "*See, see,—Dick, Dick-Cissel, Cissel!*," therefore "Dick Cissel" is well known to every farmer's boy as well as to all who visit the country during the season of clover-blooms and wild roses, when "Dame Nature" is in her most joyous mood.

Perhaps the prevalent popular name of this species is "Little Field Lark" or "Little Meadow Lark," a name suggested by his yellow breast and black jugular spot, which recall strongly the similar markings of the *Sturnella*, and also the fact that the two frequent similar localities. The name "Black-throated Bunting" is probably never heard except from those who have learned it from the books.

The location of the nest varies much with locality, though probably not more than in the case of many other species. At Mount Carmel, all that I found were in clover fields, and built upon or very close to the ground. In Richland county they were almost invariably built in small clumps of coarse weeds, at a height of about a foot above the ground. In Wisconsin, however, according to Dr. Brewer (*Hist. N. Am. B.* Vol. II., p. 68), Dr. P. R. Hoy, of Racine has never found a nest within one foot of the ground, some of them being as elevated as six feet. Of nineteen nests discovered by Dr. Hoy during one season, "ten were built in gooseberry bushes, four on thorn bushes, three among blackberry bushes, one on a raspberry bush, and one on a wild rose."



FAMILY ICTERIDÆ.—THE AMERICAN ORIOLES.

"CHAR. Primaries nine. Tarsi scutellate anteriorly; plated behind. Bill long, generally equal to the head or longer, straight, or gently curved, conical, without any notch, the commissure bending downwards at an obtuse angle at the base. Gonys generally more than half the culmen, no bristles about the base of bill. Basal joint of the middle toe free on the inner side; united half-way on the outer. Tail rather long, rounded. Legs short." (*Hist. N. Am. B.*)

This family is one of those eminently characteristic of the New World, all the species being peculiar to America. It is of course most numerously represented within the Tropics.

Three "subfamilies" have been defined, but their limits are purely arbitrary, it being in some cases difficult to decide whether a species belongs to the genus *Icterus* or *Agelaius*, each typical, respectively, of the so-called "*Icterina*" and "*Agelaina*." These artificial sections are thus defined in *History of North American Birds* (Vol. II., page 147 :

Agelaina. Bill shorter than, or about equal to, the head; thick, conical, both mandibles about equal in depth; the outlines all more or less straight, the bill not decurved at tip. Tail rather short, nearly even or slightly rounded. Legs longer than the head, adapted for walking; claws moderately curved.

Icterina. Bill rather slender, about as long as the head; either straight or decurved. Lower mandible less thick than the upper; the commissure not sinuated. Tarsi not longer than the head, nor than middle toe; legs adapted for perching. Claws much curved.

Quiscalina. Tail lengthened, considerably or excessively graduated. Bill as long as, or longer than, the head; the culmen curved towards the end, the tip bent down, the cutting edges inflexed, the commissure sinuated. Legs longer than the head, fitted for walking.

The North American genera may be thus arranged under their respective "subfamily" headings :

Subfamily Agelaina.

A. Bill shorter than the head. Feathers of head and nostrils as in B.

1. *Dolichonyx.* Tall feathers with rigid stiffened acuminate points. Middle toe very long, exceeding the head.
2. *Molothrus.* Tall with the feathers simple; middle toe shorter than the tarsus or head.

B. Bill as long as the head. Feathers of crown soft. Nostrils covered by a scale which is directed more or less downwards.

- Agelaius*. Bill shorter than the second and third. Outer lateral claws moderate; middle claws moderate.
- Xanthocephalus*. Bill shorter than the head. Outer lateral claw reaching nearly to the tip of the head. The other claws all much elongated.
- C. B.* Bill longer than the head. Feathers of crown with the shafts projecting beyond the head. Nostrils covered by a scale which stands out more or less from the head.
- Sturnella*. Tail feathers longer. Middle toe equal to the tarsus.

Subfamily Icterina.

- Icterus*. Bill shorter than the head, sometimes slightly decurved, about as long as, or a little longer than the head. Nostrils as in *Agelaius*. Tail rounded or graduated. Middle toe slightly longer than the wing.*

Subfamily Quiscalina.

- Scelopophagus*. Tail shorter than the wings: nearly even. Bill shorter than the head.
- Quiscalus*. Tail longer than the wings: much graduated. Bill as long as, or longer than, the head.

The three so-called subfamilies represent, superficially, three Old World families; viz.: The *Agelaiinae* may be said to correspond to the Starlings (*Sturnidae*), and have been called the American Starlings; the *Icterinae* may likewise be compared with the Orioles (*Oriolidae*), and in fact currently, though very improperly, bear the same name. For want of a more distinctive term, that of American Orioles is perhaps defensible, the name "Hang-nests," while very appropriate for the *Icterinae*, lacking sufficiently exclusive pertinence to make it preferable. The *Quiscalinae* are very appropriately called Crow-Blackbirds, but they have been termed Grakles by many authors, on account of a supposed resemblance to the true Grakles.

GENUS **DOLICHONYX** SWAINSON.

Dolichonyx SWAINSON, Zool. Journ. iii, 1827, 351. Type, *Emberiza oryzivora* LINN.

"GEN. CHAR. Bill, short, stout, conical, little more than half the head; the commissure slightly sinuated; the culmen nearly straight. Middle toe considerably longer than the tarsus (which is about as long as the head); the inner lateral toe longest, but not reaching the base of the middle claw. Wings long; first quill longer. Tail-feathers acuminate pointed at the tip, with the shaft stiffened and rigid, as in the Woodpeckers.

"The peculiar characteristic of this genus is found in the rigid acuminate tail-feathers and the very long middle toe, by means of which it is enabled to grasp the vertical stems of reeds or other slender plants." (*Hist. N. Am. B.*)

A peculiarity in the plumage of the only known species is that while the adult male in spring is deep black varied with buff nape and whitish scapulars and rump, this livery is changed at the end of the breeding season for a sober one of streaked yellowish, like that worn by the female throughout the year.

Dolichonyx oryzivorus (Linn.)**BOBOLINK.**

Popular synonyms. Bob Lincoln; Skunk Blackbird (Northern States); Reed Bird, Ortolan (Atlantic coast in Autumn); Rice Bird (South Carolina and Georgia); Butter Bird (Jamaica).

Emberiza oryzivora LINN. S. N. ed. 10, i, 1758, 179; ed. 12, i, 1766, 311.—WILS. Am. Orn. ii, 1810, 48, pl. 12, figs. 1, 2.

Dolichonyx oryzivorus SWAINSON'S Zool. Jour. iii, 1827, 351.—AUD. Synop. 1839, 138; B. Am. iv, 1842, 10, pl. 211.—BAIRD, B. N. Am. 1858, 522; Cat. N. Am. B. 1859, No. 399.—COUES, Key, 1872, 154; Check List, 1874, No. 210; B. N. W. 1874, 178; 2d Check List, 1882, No. 312.—B. B. & R. Hist. N. Am. B. ii, 1874, 149, pl. 32, figs. 4, 5.—RIDG. Nom. N. Am. B. 1881, No. 257.

Icterus agripennis BONAP. Obs. Wilson, 1824, No. 87.—NUTT. Man. i, 1832, 185.—AUD. Orn. Biog. i, 1831, 283; v, 1839, 496, pl. 54.

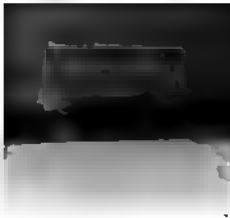
HAB. Eastern North America, north to the Saskatchewan (lat. 60°), west to or even beyond the Rocky Mountains (Ruby Valley, Nevada, and Salt Lake Valley, Utah, in September); in winter, south through Middle America, West Indies, and South America, to Bolivia, Argentine Republic, and Paraguay; Galapagos.

"**SP. CHAR.** General color of *male* in spring, black; the nape, brownish cream-color; a patch on the side of the breast, the scapulars, and rump, white, shading into light ash on the upper tail-coverts and the back below the interscapular region. The outer primaries sharply margined with yellowish white; the tertials less abruptly; the tail-feathers margined at the tips with pale brownish ash. In autumn totally different, resembling the female.

"*Female*, yellowish beneath; two stripes on the top of the head, and the upper parts throughout, except the back of the neck and rump, and including all the wing feathers generally, dark brown, all edged with brownish yellow, which becomes whiter near the tips of the quills. The sides sparsely streaked with dark brown, and a similar stripe behind the eye. There is a superciliary and a median band of yellow on the head. Length of male, 7.70; wing, 3.83; tail, 3.15." (*Hist. N. Am. B.* vol. ii, 149.)

In *History of North American Birds* (Vol. II., pp. 150, 151), Dr. Brewer thus describes the habits and song of this species:

"In the earliest approaches of spring, in Louisiana, when small flocks of male Bobolinks made their first appearance, they are said by Mr. Audubon, to sing in concert; and their song thus given is at once exceedingly novel, interesting, and striking. Uttered with a volubility that even borders upon the burlesque and the ludicrous, the whole effect is greatly heightened by the singular and striking manner in which first one singer and then another, one following the other, until all have joined their voices, take up the note and strike in, after the leader has set the example and given the signal. In this manner sometimes a party of thirty or forty Bobolinks will begin, one after the other, until the whole unite in producing an extraordinary medley, to which no pen can do justice, but which is described as very pleasant to listen to. All at once the music ceases with a suddenness not less striking and extraordinary. These concerts are repeated from time to time, usually as often as the flock alights. * * * In New England the Bobolink treats us to no such concerts as those described by Audubon, where many voices join in creating their peculiar, jingling melody. When they first appear, usually after the middle of May, they are in small parties, composed of either sex, absorbed in their courtships and overflowing with song. When two or three male Bobolinks, decked out in their gayest spring apparel, are paying their attentions to the same drab-colored female, contrasting so strikingly in her sober brown dress, their performances are quite entertaining, each male endeavoring to outdo the other in the brilliancy of his song."



general result to which we can find no parallel in any of the musical performances of our other song-birds. It is at once a unique and a charming production. Nuttall speaks of their song as monotonous, which is neither true nor consistent with his own description of it. To other ears they seem ever wonderfully full of variety, pathos and beauty.

"The young, in due time, assume the development of mature birds, and all wear the sober plumage of the mother. And now there also appears a surprising change in the appearance of our gayly attired musician. His showy plumage of contrasting white and black, so conspicuous and striking, changes with almost instant rapidity into brown and drab, until he is no longer distinguishable, either by plumage or note, from his mate or young."

One would suppose that the terrible slaughter carried into the ranks of this species during its autumnal migration would materially diminish its numbers. That this has been the result is a fact which has been noted by many persons resident in those portions of the country where the Bobolink is a familiar summer sojourner.

The Bobolink breeds only in the northern part of Illinois, where, according to Mr. Coale, it is an abundant summer resident. In the middle and southern portions of the State it is transient only, merely passing hurriedly through in spring and fall, but so different in plumage and habits during the two seasons that probably few persons suspect their being the same bird.

GENUS *MOLOTHRUS* SWAINSON.

Molothrus SWAINSON, F. BOR.-AM. II, 1831, 377. Type, *Fringilla pecoris* GM., = *Oriolus ater* BODD.

"GEN. CHAR. Bill short, stout, about two thirds the length of head; the commissure straight, culmen and gonys slightly curved, convex, the former broad, rounded, convex, and running back on the head in a point. Lateral toes nearly equal, reaching the base of the middle one, which is shorter than the tarsus; claws rather small. Tail nearly even; wings long, pointed, the first quill longest. As far as known, the species make no nest, but deposit the eggs in the nests of other, usually smaller, birds.

"The genus *Molothrus* has the bill intermediate between *Dolichonyx* and *Agelaius*. It has the culmen unusually broad between the nostrils, and it extends back some distance into the forehead. The difference in the structure of the feet from *Dolichonyx* is very great.

"Species of *Molothrus* resemble some of the *Fringillidæ* more than most of the typical *Icteridæ*. The bill is, however, different, the tip

being without notch; the culmen running back farther on the forehead, the nostrils being situated fully one third or more of the total length from its posterior extremity. The entire absence of notch in the bill and of bristles along the rictus are strong features. The nostrils are perfectly free from any overhanging feathers or bristles. The pointed wings, with the first quill longest, or nearly equal to second, and the tail with its broad rounded feathers, shorter than the wings, are additional features to be specially noted. (*Hist. N. Am. B.*)

***Molothrus ater* (Bodd.)**

COWBIRD.

Popular synonyms. Cow Blackbird; Cow-pen Bunting; Lazy Bird (Connecticut); Clod-hopper.

Ortolus ater Bodd. Tabl. P. E. 1761, 37.

Molothrus ater GAY, 1870. Ridgw. Noun. N. Am. B. 1881, No. 258.—COUES, 2d Check List, No. 313.

Pringilla pecaria Gmel. N. N. I. 1790, 910 (female).

Emberiza pecaria Wils. Am. Orn. II, 1810, 145, pl. 18, figs. 1, 2, 3.

Icterus pecaria Bp. 1824. Nutt. Man. I, 1858, 178.—AUD. Orn. Biog. I, 1831, 483; v. 1839, 233, 400, pls. 90, 424.

Molothrus pecaria Sw. & Rich. F. R. A. II, 1831, 277. Aud. Synop. 1839, 139; B. Am. IV, 1842, 18, pl. 212. Baird, H. N. Am. 1869, 324; Cat. N. Am. B. 1869, No. 400.—COUES, Key, 1872, 166; Check List 1874, No. 211; B. N. W. 1874, 180.—B. B. & R. Hist. N. Am. B. II, 1874, 154, pl. 32, figs. 6, 7.

Pringilla ambigua Nutt. Man. I, 1852, 494 (= young).

HAB. Temperate North America (except Pacific Coast?), north to about 68°; breeds chiefly north of 36°, and winters mainly south of the same parallel, down to southern border of the United States.

The Cowbird is a common species throughout the State. It is resident southward, but only a summer sojourner in the northern portions. It is at all seasons gregarious, associating in small flocks, which follow the furrow made by the ploughman or keep company with the cattle, often alighting upon their backs. The Cowbird builds no nest, but lays its eggs surreptitiously in the nests of other birds. In this it evinces no preference, except that a species smaller than itself is usually selected, and never one very much its superior in size; usually a very much smaller bird is thus imposed on. It makes no attempt, however, to select a species whose eggs more or less resemble its own, but drops its eggs indiscriminately in nests whose owners lay white eggs, plain blue eggs, or speckled eggs. The number of these parasitic eggs which may be found in one nest varies from one to five, and it may be that, in some cases at least, all are deposited by one bird, although it is equally probable that sometimes the eggs of two or more individuals are dropped in the same nest. It is interesting to watch the female when she is searching for a nest in which to deposit the egg she is about to lay. She hunts stealthily through the woods, usually among the undergrowth, and when a nest is discovered, patiently awaits from a convenient hiding place the temporary absence of the parent, when the nest is stealthily and hastily inspected, and if found suitable she takes possession and deposits her egg, when she departs as quietly as she came. The male Cowbird is polygamous, and becomes quite amorous during the breeding season, parading before the females with spread wings and tail, now and then swelling up until he seems ready to burst; but the looked-for catastrophe is prevented by the emission of a ridiculous squeaking song, when he subsides to his original proportions.

GENUS **XANTHOCEPHALUS** BONAPARTE.

Xanthocephalus BONAP. *Conspectus*, 1, 1850, 451. Type, *Icterus icterocephalus* BONAP.

"GEN. CHAR. Bill conical, the length about twice the height; the outlines nearly straight. Claws all very long; much curved; the inner lateral the longest, reaching beyond the middle of the middle claw. Tail narrow, nearly even, the outer web scarcely widening to the end. Wings long, much longer than the tail; the first quill longest." (*Hist. N. Am. B.*)

This genus differs from *Agelaius* in much longer and more curved claws, and in having first or second quill longest, instead of the longest being the second, third, or fourth.

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with a greater discrepancy in size between the sexes, the female being scarcely more than half the bulk of the male. The plumage is black with the head, neck, and jugulum yellow.

Xanthocephalus xanthocephalus (Bonap.)

YELLOW HEADED BLACKBIRD.

Sw. Jour. Phil. Ac. v, 1826: 222. — *Aud. Blog.* v. 1839, 6, pl. 388.
Sw. Jour. Phil. Ac. v. 1831, 231. — *Aud. Synop.* 1839, 240; B.
Sw. Jour. Phil. Ac. v. 1837, 436.
Sw. Jour. Phil. Ac. v. 1838, 758.
Sw. Jour. Phil. Ac. v. 1838, 27 pl. 3. — *Nutt. Man.* i, 1832, 176; 2d ed. 1840, 187.
Sw. Jour. Phil. Ac. v. 1839, 531; *Cat. N. Am. B.* 1859, No.
Sw. Jour. Phil. Ac. v. 1874, No. 213; 2d ed. 1882, No. 319; *B. N. W.*
Sw. Jour. Phil. Ac. v. 1874, 167, pl. 22, fig. 9 pl. 33, fig. 9. — *Ridgw.*
Sw. Jour. Phil. Ac. v. 1881, No. 200.

North America regularly to Wisconsin, Illinois, Kansas, etc.,
 to Pennsylvania, Florida and Cuba, north to the Saskatchewan.
 Mexico. — Accidental in Greenland.

Coloration. Head, neck, and jugulum yellow, varying from
 golden to very rarely to a pinkish saffron hue; primary coverts
 golden white; rest of plumage uniform dull black, the lower
 coverts immediately surrounding the anus yellow; lores,
 feathers at the base of the bill also black. *Adult male in winter.*
Head and neck washed with dusky. Total length about 10½-11½
 inches; wing 6½-6.80; tail 4.50-4.85; culmen .90; tarsus 1.30; middle toe 1.05.
Adult female in winter. Head and neck washed with dusky, the throat and jugulum dull yellow, the middle of the
 back washed with dusky. Total length about 9 inches, extent 14½; wing 4.40-4.65; tail

additional shyness of the former. Their nests vary endlessly in size, from four to twelve inches in depth, although the latter size is rather uncommon."

Mr. Coale informs me that colonies nest in rushes in the Calumet marshes, that they are bold and interesting, and that he has seen adults on the ground along country roads, some distance from water.

GENUS *AGELAIUS* VIEILLLOT.

Agelaius VIEILLLOT, *Analyse*, 1816, 33. Type, *Oriolus phoeniceus* LINN.

"GEN. CHAR. First quill shorter than second; claws short; the outer lateral scarcely reaching the base of the middle. Culmen depressed at base, parting the frontal feathers; length equal to that of the head, shorter than tarsus. Both mandibles of equal thickness and acute at tip, the edges much curved, the culmen, gonyx, and commissure nearly straight or slightly sinuated; the length of bill about twice its height. Tail moderate, rounded, or very slightly graduated. Wings pointed, reaching to end of lower tail-coverts. Colors black with red shoulders in North American species. One West Indian with orange-buff. Females streaked except in two West Indian species.

"The nostrils are small, oblong, overhung by a membranous scale. The bill is higher than broad at the base. There is no division between the anterior tarsal scutellæ and the single plate on the outside of the tarsus." (*Hist. N. Am. B.*)

This genus is represented in eastern North America by a single species, the common Red-winged Blackbird (*A. phoeniceus*).

Agelaius phoeniceus (Linn.)

RED-WINGED BLACKBIRD.

Popular synonyms. Red-winged Starling or Blackbird; Red-and-buff-shouldered Blackbird; Red-shouldered Blackbird; Swamp Blackbird.

Oriolus phoeniceus LINN. *S. N.* ed. 12, i, 1766, 161.

Agelaius phoeniceus VIEILL. *Analyse*, 1816.—AUD. *Synop.* 1839, 141; *B. Am.* iv, 1842, 31, 216.
—BAIRD, *B. N. Am.* 1858, 526; *Cat. N. Am. B.* 1859, No. 401.—COUES, *Key*, 1872, 156;
Check List, 1874, No. 212; 2d ed. 1882, No. 316; *B. N. W.* 1874, 186, (part).—B. B. & R.
Hist. N. Am. B. ii, 1874, 159, pl. 33, figs. 1, 2, 3.—RIDGW. *Nom. N. Am. B.* 1881, No. 261.

Icterus phoeniceus "DAUD." LICHT, 1823.—NUTT. *Man.* i, 1832, 169.—AUD. *Orn. Biog.* i, 1831, 348; v, 1839, 487, pl. 67.

Sturnus predatorius WILS. *Am. Orn.* iv, 1811, 30, pl. 30, fig. 1.

HAB. Temperate North America, more rare on Pacific coast, where represented by allied species, *A. gubernator* WAGL.; north to the "Fur Countries," south, in winter to Costa Rica, but wintering, more or less regularly, north to 35° or further. Bahamas, but not in Cuba, where represented by *A. assimilis*. Accidental in England.

SP. CHAR. *Adult male.* Uniform deep black, the lesser wing-coverts brilliant scarlet, the middle wing-coverts buff or ochraceous. Bill and feet deep black, iris brown. Total length (fresh), about 9.00-9.50 inches; extent, 14.50-15.75. *Adult female.* Above dusky grayish brown, the feathers narrowly edged with light grayish, rusty, etc.; beneath

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... dusky the hind and throat sometimes sides of head also, ... with buff or pink. Lesser wing-coverts sometimes dark brown ... extent 12.15-13.00. "First plumage, female. Above ... of the crown, nape and interscapular region, with the ... primaries, secondaries, and tertiaries, edged and tipped ... light yellowish-brown, thickly and broadly streaked ... sides of throat and head, including a considerable space ... wash orange color in the dried specimen with a few ... a specimen in my collection obtained at Cambridge, ... first plumage, but none, differ but little from the indivi- ... space on the sides of the throat, although these ... A male in transition, dress collected at ... with, though fully feathered, has the throat dull brownish ... on the breast. The wing and tail-feathers ...

... Crown dark brown with a faint rusty edging ... yellow, with a rusty tinge, finely spotted with a dark ... edging up in the secondaries and tertiaries ... feather having a broad V-shaped mark of dull black ... feather edges, with fulvous ashy; shoulder dull red with black ... greater coverts tipped with the same color. Super- ... A space anterior to and beneath the eye dusky black. ... upon the abdomen edged broadly with pale ashy, ... The light edging of the feathers gives the under parts ... (From a specimen in my collection taken at ... This plumage although not to my knowledge pre- ... characteristic one of the young in autumn. I am un- ... uniform black coloring at all seasons. A re- ... is afforded by a fine adult male in my ... patch of pale yellow tinged with rose color upon ... for I have seen several others with a similar ... It probably represents an exceptionally high condition or ...

... narrow winged birds, n

mounts guard upon some prominent perch near by, and cheers them with his song. This song, while in a measure harsh, has yet a peculiar metallic resonance which renders it not unpleasant; and when the songs of many individuals are blended the resulting chorus is decidedly musical. The normal, or usual, song sounds like *con'-cur-ee'*, but there are many variations from this modulation. When singing, the male bends forward his body, swells his plumage, and by some peculiar adjustment of the wings brings his scarlet epaulettes into striking prominence; and when he sallies from his perch to make the regular round of inspection over his harem these splendid decorations flash forth with rich brilliancy, no doubt to the admiration of the faithful creatures for whom the display is intended.

The nest of the Red-winged Blackbird is very variously situated, but it is always in or in very close proximity to a swamp or marsh. It is placed either among rank grasses or sedges, rushes, or other marsh plants, or in bushes growing in the water; and on one occasion the writer found a colony which had built their nests in "sage bushes" (*Artemisia tridentata*) growing in and about a shallow alkaline pond, on Antelope Island, in the Great Salt Lake. The most noteworthy departure from the usual situation, however, known to the author, was that of a nest built in a small elm tree standing in the middle of a moderately dry meadow, and placed at a height of about fifteen feet from the ground.

GENUS **STURNELLA** VIEILLOT.

Sturnella VIEILLOT, Analyse, 1816, 34. Type, *Alauda magna* LINN.

"GEN. CHAR. Body thick, stout; legs large, toes reaching beyond the tail. Tail short, even, with narrow acuminate feathers. Bill slender, elongated; length about three times the height; commissure straight from the basal angle. Culmen flattened basally, extending backwards and parting the frontal feathers; longer than the head, but shorter than tarsus. Nostrils linear, covered by an incumbent membranous scale. Inner lateral toe longer than the outer, but not reaching to basal joint of middle, which is equal to the tarsus. Hind claw nearly twice as long as the middle. Feathers of head stiffened and bristly; the shafts of those above extended into a black seta. Tertiaries nearly equal to the primaries. Feathers above all transversely banded. Beneath yellow, with a black pectoral crescent." (*Hist. N. Am. B.*)

Two quite distinct though very similar species of *Sturnella* are found in Illinois, one of them belonging exclusively to the eastern and the other to the western portions of the United States, but occurring together in the prairie districts of the Mississippi Valley, especially west of the Mississippi River.

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distinguished by the following characters:

Maxilla defined strictly between the maxilla. Lateral stripes
 upper parts with much black, and with the dark
 tail-feathers usually connected along the middle line of
 the tail. States to the border of the Great Plains.
 Whitethroat extending over the maxilla nearly or quite to the
 lateral crown stripes streaked with black and grayish in nearly
 all parts with less black, the dark bars of the tertials and middle tail-
 feathers. Western United States and western Mexico, east to the
 Mississippi Valley.

It is rather difficult to distinguish specimens of these
 at the most casual observer of birds may readily dis-
 tinguish them by their totally different notes—probably no
 other genus of birds being more distinct in this respect.

Sturnella magna (Linn.)

MEADOWLARK.

Field Lark, Old Field Lark.

Sw. N. & W. 10, 1, 1758, 167. Wils. Am. Orn. 161, 1811, 20, pl. 19.
 Baird. B. N. Am. 1858, 535; Cat. N. Am. B. 1859 No. 406.—Coues, Key,
 1882, 13, Check List, 1874 No. 214, 2d ed. 1882 No. 320; B. N. W. 1874,
 16 & 17. Hist. N. Am. B. 11, 1874, 174, pl. 34, fig. 2. Ridgw. Nom. N.
 260.
 S. Tinn. S. N. & W. 12, 1, 1766, 290.—Nutt. Man. 1, 1832, 147.—Aud. Orn.
 1839, 492, pl. 136.

as the common Meadowlark; for perhaps the majority of those who may read this book are as familiar with this bird as the author, and doubtless many are even more intimately acquainted with him. Suffice it to say, therefore, that while not one single charge has been laid at his door, so far as the author is aware, the Meadowlark is a very general favorite among lovers of birds, on account of his pleasing song, bright plumage, and pretty ways. His sweet, tender song is one of the finest to be heard in our rural districts, and is characterized by a delicacy of tone remarkable in a large bird. It is usually interpreted by the country folks as intimating that "*laziness will kill you*" (accent on the penultimate syllable), while others imagine it to say: *peek—you can't see me*,—a very appropriate translation, we think, in the case of a bird which, like the present, plays at "hide and seek" with us in the meadows. *Apropos* of the song of this bird, it has been said that on the prairies of Illinois a decided change from the song of the bird of the Atlantic States may be noticed, the variation being in the direction of the more powerful, melodious, and varied song of *S. neglecta*. But the writer has been unable to detect the slightest difference, and his experience is similar to that of others who have had the opportunity to compare the songs of meadowlarks in the two regions. *S. neglecta* itself occurs more or less plentifully on the prairies of the northern, central, and western portions of the State; and as this bird varies greatly in the character of its song with different individuals (though it is always very distinct from that of *S. magna*), it is probable that the author to whose statement we have referred heard in reality inferior songsters (probably younger birds) of the western species, and not *S. magna*.

***Sturnella neglecta* (Aud.)**

WESTERN MEADOWLARK.

Popular synonym. Western Fieldlark.

Sturnella neglecta AUD. B. Am. vii, 1843, 339, pl. 487.—BAIRD, B. N. Am. 1853, 537; Cat. N. Am. B. 1859, No. 407.—RIDGW. Nom. N. Am. B. 1881, No. 264.

Sturnella magna var. *neglecta* COUES, Key, 1872, 187; Check List, 1874, No. 214a.—B. B. & R. Hist. N. Am. B. ii, 1874, 176, pl. 34, fig. 1.

Sturnella magna, b. *neglecta* COUES, B. N. W. 1874, 190.

Sturnella magna neglecta COUES, 2d Check List, 1882, No. 322.

HAB. Western United States, east to the prairie districts of the Mississippi Valley, as far as central and northern Illinois, Wisconsin, Iowa, etc.; south to western Texas and western Mexico, as far as Colima.

"SP. CHAR. Feathers above dark brown, margined with brownish white, with a terminal blotch of pale, reddish brown. Exposed portions of wings and tail with transverse bands, which, in the latter, are completely isolated from each other, narrow and linear. Beneath yellow, with a black pectoral crescent. The yellow of the throat extending on the sides of the maxilla. Sides, crissum, and tibia very pale reddish brown, or nearly white, streaked with blackish. Head with a light median and superciliary stripe, the latter yellow in front of the eye; a blackish line behind it. The transverse bars on the feathers above (less so on the tail) with a tendency to become confluent near the exterior margin. Length, 10 inches; wing, 5.25; tail, 3.25; bill, 1.25." (*Hist. N. Am. B.*)

Adult male. Wing, 4.40-5.10; tail, 3.30-3.50; culmen, 1.18-1.40; bill, from nostril, .85-.90; tarsus, 1.30-1.45; middle toe, 1.10-1.15.

Adult female. Wing, 4.35-4.45; tail, 3.05-3.10; bill, from nostril, .80-.85; tarsus, 1.25-1.35; middle toe, 1.05-1.10.

Adult males shot by the writer in Nevada, measured, when fresh, as follows: Total length, 9.75-10.25; extent, 16.00-17.00; maxilla and tip of mandible, black; basal two thirds of the mandible, and posterior three fourths of the maxillary tomium, pure pale blue; iris, brown; legs and feet uniform, delicate, pale, ashy lilaceous.

According to Mr. E. W. Nelson (*Bull. Essex Inst.* Vol. VIII., 1876, p. iii), the Western Meadowlark is "a regular but rather rare summer resident upon prairies" in the northeastern portion of the State, and he conjectures that it "is probably a common summer resident upon the prairies in the western portion." He records "a fine specimen" in the collection of Mr. A. W. Brayton, "taken near Chicago the last of May, 1876," and among Mr. H. K. Coale's notes I find an entry reading "Englewood, May, 1876," which, however, may possibly refer to the same specimen. On the prairies of Richland county I have, on a few occasions, heard its unmistakable song, but have never been able to obtain a specimen.

GENUS *ICTERUS* BRISSON.



The species (including a western one, which may reasonably be expected to occur as a straggler) are characterized as follows:

- A.** Tail much shorter than the wing, nearly even; bill with straight outlines. *Males* orange and black, the *females* much duller. (Subgenus *Yphantis*.)
1. ***I. galbula*.** *Adult male.* Head and neck all round, back, wings, and part of tail, deep black, the wing-feathers edged with white; rest of plumage usually rich cadmium-orange, but varying from yellowish orange to intense reddish orange. *Adult female.* Above olive, usually more or less mixed with blackish; beneath dull orange, the throat usually mixed with black (whole head and neck sometimes broken blackish); tail yellowish olive. *Young* like the adult female, but without black on throat.
 2. ***I. bullocki*.** *Adult male.* Crown, nape, back, wings, and part of tail, deep black; a narrow stripe through the eye and a broad one on the throat, also black; a large white patch covering greater wing-coverts; rump dull orange; superciliary stripe, with lower parts orange, varying from Indian-yellow to a rich reddish cadmium hue. *Adult female* and *young male in second year.* Above brownish gray the back usually spotted with blackish; beneath brownish white, yellowish anteriorly—sometimes wholly yellowish—the throat often with more or less of an indication of a dusky stripe; tail yellowish olive.
- B.** Tail about equal to the wings, graduated; bill slender, decurved at the tip. *Adult male;* chestnut and black. (Subgenus *Pendulinus*.)
3. ***I. spurius*.** *Adult male.* Head, neck, jugulum, back, wings and tail, deep black; rump, lesser and middle wing-coverts, and lower parts, rich chestnut. *Adult female.* Above olive-green, beneath greenish yellow. *Young male in second year.* Similar to adult female, but throat black. *Young, first plumage.* Much like the adult female.

Icterus galbula (Linn.)

BALTIMORE ORIOLE.

Popular synonyma. Hanging Bird; Hang-nest; Golden Oriole; Golden Robin; English Robin; Fire Bird; Pea Bird.

Coracias galbula LINN. S. N. ed. 10. 1, 1758, 107.

Icterus galbula COUES, Bull. Nutt. Orn. Club, v, 1890, 96; 2d Check List, 1892, No. 326; 2d Key, 1894, 408.—RIDGW. Nom. N. Am. B. 1881, No. 271.

Oriolus baltimore LINN. S. N. ed. 12. 1, 1866, 162.—WILS. Am. Orn. 1, 1808, 23, pl. 1, fig. 3; vi, 88, pl. 53, fig. 4.

Icterus baltimore DAUD. 1800.—NUTT. Man. 1, 1832, 152.—AUD. Orn. Biog. 1, 1831, 66; v, 1839, 278, pls. 12, 423; Synop. 1839, 143; B. Am. iv, 1842, 37, pl. 217.—BAIRD, B. N. Am. 1853, 548; Cat. N. Am. B. 1859, No. 415.—COUES, Key, 1872, 158; Check List, 1874, No. 216; B. N. W. 1874, 193.—B. B. & R. Hist. N. Am. B. ii, 1874, 195, pl. 35, fig. 5.

HAB. Temperate eastern North America, west to the eastern base of the Rocky Mountains, breeding chiefly north of 35°. In winter, eastern Mexico and Central America to Colombia; Cuba.

SP. CHAR. *Adult male.* Head and neck all round, jugulum (especially the median portion), back, wings, two middle tail-feathers, and middle portion of other rectrices, deep black. Lesser wing-coverts, rump, lower parts, and greater portion of tail, rich pure cadmium-orange. Feathers of wings edged with white. Bill fine light blue, the upper half of the maxilla black; iris brown; legs and feet plumbeous blue. *Adult female.* Above olive, mixed with dull greenish orange, the crown more or less mixed with black, and the back inclining to gray. Wings dusky, with two white bands. Tail golden olive. Lower parts dull orange, the abdomen inclining to whitish. Throat usually mixed with black. *Young.* Similar to the adult female, but without any black about head. Wing, 3.55-3.80; tail, 3.10-3.35; bill, from nostril, .43-.50.

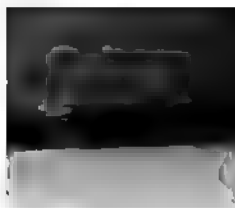
...with an orange
...without any black;
...blackish, with two broad
...edges of white to the tertials.
...the Baltimore Oriole is the
...of the most attractive
...the familiarity of its habits.
...resident throughout the State,
...the third week in April and
...settled.

...Brewer. It is one of the most
...New England. Gay and brilliant
...manners and habits, and a vo-
...and variety in his notes,
...a great favorite, but for its
...our gardens. He makes his
...seeming regardless of the
...season. Rarely does the 10th of
...notes, and rarely, if ever

...long one, but soon terminates, as
...broods require an undivided
...favors the world with
...to attract attention by their
...by their rich and full-toned

Icterus spurius (Linn.)

HEMLOCK ORIOLE.



Oriolus mutatus WILS. Am. Orn. i, 1808, pl. 4, figs. 1-4.

Xanthornus affinis LAWR. Ann. Lyc. N. Y. v, 1851, 113.

Icterus spurius var. *affinis* COUES, Key, 1874, 158.

Icterus spurius b *affinis* COUES, B. N. W. 1874, 193.

HAB. Eastern United States, west to the edge of the Great Plains (occasionally to the Rocky Mountains), north, rarely, to Canada, breeding as far south as the Rio Grande. In winter, south through eastern Mexico and Central America (both sides) to Colombia; Cuba.

SP. CHAR. Bill slender, attenuated, considerably decurved; tail moderately graduated. *Male*, three years. Head and neck all round, wings, and interscapular region of back, with tail-feathers, black. Rest of under parts, lower part of back to tail, and lesser upper wing-coverts, with the lower ones, brownish chestnut. A narrow line across the wing, and the extreme outer edges of quills, white. *Female*, Uniform greenish yellow beneath, olivaceous above, and browner in the middle of the back; two white bands on the wings. Young male of two years like the female, but with a broad black patch from the bill to the upper part of the breast, this color extending along the base of the bill so as to involve the eye and all anterior to it to the base of the bill, somewhat as in *I. cuculatus*. Length of Pennsylvania male specimen, 7.25; wing, 3.25." (*Hist. N. Am. B.*)

In the southern half, at least, of Illinois the Orchard Oriole is far more numerous than the Baltimore; and though much less splendid in coloring is still a handsome bird, besides being an excellent songster, his notes having an ecstatic character quite the reverse of the mournful lament of his larger and more brilliantly colored cousin. The more prominent characteristics of the species are thus described by Dr. Brewer:

"The Orchard Oriole is an active, sprightly, and very lively species, and possesses a very peculiar and somewhat remarkable song. Its notes are very rapidly enunciated, and are both hurried and energetic. Some writers speak of the song as confused, but this attribute is not in the utterance of the song, the musician manifesting anything but confusion in the rapid and distinct enunciation of his gushing notes. These may be too quick in their utterance for the listener to follow, but they are wonderful both for their rapidity and their harmony. His performance consists of shrill and lively notes, uttered with an apparent air of great agitation, and they are quite as distinct and agreeable, though neither so full nor so rich, as are those of the more celebrated Golden Robin.

"In the Central States, from New York to North Carolina, these birds are not only very abundant, but very generally diffused. Hardly an orchard or a garden of any size can be found without them. They seem to prefer apple trees for their abode, and for the construction of their nests. These structures, though essentially different, are, in their style of architecture, quite as curiously wrought and ingenious as those of the Baltimore. They are sus-

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small twigs, often at the very extremity of the branches. They are usually formed externally of a peculiar tough, and flexible grass. This material is woven together in a very wonderful manner, and with as much intricacy as if actually sewed with a needle. They are funnel-shaped, open at the top, and generally about an inch in breadth, and three deep. The cavity has a depth and diameter of about two inches."

GENUS **SCOLECOPHAGUS** SWAINSON.

SWAINSON, F. *Bor.-Am.* ii, 1831, 404. Type, *Oriobus ferrugineus* GMELIN. Bill longer than the head, rather slender, the edges inflexed as in *Quiscalus*; greatly resembles; the commissure sinuated. Culmen rounded, longer than the middle toe. Tail even, or slightly rounded.

Characteristics will readily distinguish this genus from *Agelaius*. The bill, however, is much like that of *Agelaius*. The bill, however, is attenuated, the culmen curved and slightly sinuated. The base of the commissure is shorter. The culmen is not so long as the base posterior to the nostrils, instead of being much longer. The two North American species may be distinguished as follows:

Bill slender; height at base not $\frac{1}{4}$ the total length. Color of male reddish brown over whole body, wings, tail and abdomen glossed

"SP. CHAR. Bill slender; shorter than the head; about equal to the hind toe; its height not quite two fifths the total length. Wing nearly an inch longer than the tail; second quill longest; first a little shorter than the fourth. Tail slightly graduated; the lateral feathers about a quarter of an inch shortest. General color black, with purple reflections; the wings, under tail-coverts, and hinder part of the belly, glossed with green. In autumn the feathers largely edged with ferruginous or brownish, so as to change the appearance entirely. Spring female dull, opaque plumbeous or ashy black; the wings and tail sometimes with a green lustre. Young like autumnal birds. Length of male, 9.50; wing, 4.75; tail, 4.00. Female smaller." (*Hist. N. Am. B.*)

It is only during the colder months that this blackbird makes its appearance in Illinois. Perhaps the greater number pass beyond the limits of our State in midwinter, but the writer has seen small flocks in December and January in the bottom lands near Mount Carmel. In early spring they become quite numerous in swampy forests, congregating mostly about the borders of ponds or the banks of streams. Their peculiar squeaking but not unmusical song, which may be heard just before their departure for the North, somewhat resembles that of the Bronzed Grackle (*Quiscalus æneus*) but is much less harsh and uttered in a higher key. Occasionally, especially during cold weather, small flocks frequent the barn-yards, for the purpose of gathering the grain which has become scattered about during the feeding of the stock.

***Scolecophagus cyanocephalus* (Wagl.)**

BREWER'S BLACKBIRD.

Popular synonyms. Violet-headed or Blue-headed Blackbird; Corral Bird.

Psarocolius cyanocephalus WAGL. Isis, 1829, 758.

Scolecophagus cyanocephalus CAB. 1851.—BAIRD, B. N. Am. 1858, 552; Cat. N. Am. B. 1859, No. 332.—COUES, Key, 1872, 160; 2d ed. 1884, 411; Check List, 1874, No. 222; 2d ed. 1882, No. 332; B. N. W. 199.—B. B. & R. Hist. N. Am. B. ii, 1874, 206, pl. 35, fig. 3.—RIDGW. Nom. N. Am. B. 1881, No. 274.

Quiscalus breweri AUD. B. Am. viii, 1843, 345, pl. 492.

HAB. Western United States, eastern Minnesota, eastern Kansas, and, occasionally, the States along the eastern side of the Mississippi, breeding abundantly as far to the northeast as the vicinity of Pembina, on the Red River of the North. Winters from 40°, or perhaps further north, south into Mexico.

"SP. CHAR. Bill stout, quiscaline, the commissure scarcely sinuated; shorter than the head and the hind toe; the height half the length of culmen. Wing nearly an inch longer than the tail; the second quill longest; the first about equal to the third. Tail rounded and moderately graduated; the lateral feathers about .35 of an inch shorter. General color of male black, with lustrous green reflections everywhere except on the head and neck, which are glossed with purplish violet. Female much duller, of a light brownish anteriorly; a very faint superciliary stripe. Length about 10 inches; wing, 5.30; tail, 4.40.

"Autumnal specimens do not exhibit the broad rusty edges of feathers seen in *S. ferrugineus*.

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and immature males differ from the adult males in points as *S. ferrugineus* except that the "rusty" is less prominent and more grayish. The differences in the two species are very appreciable. Thus, in the bill, though of the same length, is much broader at the base, as well as more linear in its upper part, too, is less decurved. The size is every way smaller, the iridescent gloss, which in *ferrugineus* is found on most of the wings and tail, is here confined to the head and breast of the body being of a richly lustrous and deep green, more distinct than that on the wings and tail. In one specimen only, from Santa Rosalia, there is a trace of purple on some of the wing and tail feathers. (N. M. B.)

It scarcely can be considered as more than a straggler in Illinois. At least the writer is unable to cite many records of it, though he has himself seen but a single specimen, at Mount Carmel in December, 1866, and now in the collection of the National Museum, at Washington.

GENUS **QUISCALUS** VIEILLLOT.

The genus *Quiscalus* in its most restricted sense, includes but two species, one of them with two geographical races, all of which are confined to eastern North America. Certain authors profess to be unable to distinguish the three forms which were first indicated by Professor Baird in 1858, and eleven years afterward clearly characterized by me in the "Proceedings" of the Philadelphia Academy for 1869, pp. 183-185. The fact nevertheless is evident to any one who will take the trouble to carefully examine large series of specimens (the larger the series the more positive do the differences become) that on the eastern side of the Alleghenies is found, almost exclusively, a form which may instantly be distinguished from that occurring, to the complete exclusion of the coast race, on the western side of the range in question. The coast race or species extends north to the southeastern corner of New York, and along the coast of southern New England, but becomes rare in eastern Massachusetts, beyond which point it has not been traced. To the south it extends in its typical form to northern Florida, but in the southern portion of the latter State it becomes, *by gradual transition*, smaller, with a larger bill, and somewhat different coloration. The Florida bird constitutes a local race, for which the name *Q. quiscula aglaeus* BAIRD is available, the more northern bird being the true *Q. quiscula* (LINN.) Throughout the country between the Alleghenies and Rocky Mountains, and northward to Hudson's Bay and Labrador, as well as throughout the greater part of New England and also the Middle States west of the mountains, *Q. quiscula* is wholly replaced by a bird of similar size and form but totally different coloration. This is the *Q. aneus*, mihi. I have usually ranked it as a race of *Q. quiscula*; but the circumstance that among very large series of both forms (amounting to several hundred specimens) I have never seen one which I could not immediately refer to one or the other, very strongly suggests their specific distinctness, as I had at first claimed for them. A fact equally significant of the correctness of this view is that typical specimens of *Q. aneus* have occasionally been taken, as *undoubted stragglers*, within the region inhabited by *Q. quiscula*, but at the same time no intermediate specimens appear ever to have been found. In accordance, therefore, with definite and consistent principles for my guidance in the application of the fact of intergradation as the test of conspecific relation between closely related forms, I am compelled to recognize *Q. aneus* as a distinct species until intergradation with *Q. quiscula* shall have been proven.

1. *Q. æneus*. Entire body, above and below, uniform and unvarying brassy green, or olivaceous bronze. Wings gradually shading into bronzy reddish primaries and tail more purplish violet. Head, neck, and jugulum brassy green, steel-blue, violet, or purple, *always very abruptly defined against the totally different color of the back and breast*.
 2. *Q. quiscula*. Plumage of the body varying from dark dull metallic violet or purple, *never perfectly uniform, and usually broken by traces of different metallic tints*—golden green, steel-blue, bronze, or purple to the individual. Tail and wings bluish or greenish.
 - a. *quiscula*. Head, neck and jugulum varying from brassy green violet, or purplish bronze, the color (whatever it may be) rarely defined posteriorly. Body usually with purplish predominating. 5.50-5.90; tail 5.20-6.20; bill, from nostril, .88-1.00. *Hab.* Atlantic from northern Florida to Massachusetts.
 - b. *aglaeus*. Head, neck, and jugulum usually purplish violet (more anteriorly), and usually sharply defined posteriorly. Body usually brassy green.
- Male.* Wing 5.10-5.50; tail 5.05-5.60; bill, from nostril, .90-1.05. *Hab.* Florida.

Quiscalus quiscula æneus Ridgw.*

BRONZED GRACKLE.

Popular synonym. Western Crow Blackbird.

Quiscalus versicolor AUD. B. Am. iv, 1842, 58, pl. 221 (description and account refers in part to *Q. quiscula*).—BAIRD, B. N. Am. 1858, 555 (part; western).

Quiscalus æneus RIDGW. Proc. Phil. Ac. Sci. 1869, 134.

Quiscalus purpureus var. *æneus* B. B. & R. Hist. N. Am. B. ii, 1874, 218.

Quiscalus purpureus æneus RIDGW. Nom. N. Am. B. 1881, No. 278b.—COOPER, List, 1882, No. 337.

HAB. Interior of North America, from Mississippi Valley to the Rocky Mountains and north to the Saskatchewan, Hudson's Bay Territory, and Labrador, then Massachusetts, northern New York, etc.; merely casual or occasional eastward to the Atlantic coast south of New York, being replaced along the Atlantic seaboard by *Q. aglaeus*.

SUBSP. CHAR. Entire body, above and below, uniform and unvarying brassy green, or olive-bronze. Wings gradually shading into bronze-purple, the primaries more violet-purple. Head, neck, and jugulum metallic brassy green, steel-blue, or purple (according to the individual), *always very abruptly defined against the different color of the back and breast*.

Adult male. Total length (fresh), 13.00; extent, 17.75; wing (skins), 5.55-5.60; bill, from nostril, .88-.90. Bill and feet deep black; iris yellowish white.

Adult female. Total length (fresh), 11.25-11.50; extent, 16.00-16.50; wing (in skins), 5.05-5.20; tail, 4.80-4.90; bill, from nostril, .75-.80. Bill and feet deep black; iris yellowish white.

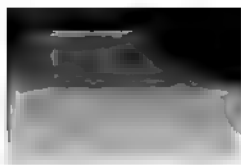
This fine but unpopular bird is very common throughout the State, and, like the Blue Jay, is in many places one of the most familiar of birds, nesting in the groves or shade trees within towns, evincing little fear of man. In the fall they congregate in large numbers, which keep together during the winter, and in the spring when these large companies break up they do not disband entirely, but separate into colonies of greater or less extent, the different pairs of which build their nests in as close proximity to one another as suitable places for their location will permit. In their choice of a location for the nest they are by no means particular, any place where it can be securely attached answering the purpose equally well; and it is by no means unusual to see in the same tree several nests, some saddled on horizontal branches, others built in a large fork, and others again in holes, either natural or those made by the Flicker. On a small island, near Mount Carmel, densely covered with a growth of young willows of twenty to thirty feet in height, but very slender, the writer once found a colony numbering upwards of seventy nests, all attached to the willow trees and supported against the trunks by small twigs. In the immediate vicinity, along the river bank, were many other nests, most of them built inside of holes in the large dead trees or in stumps.

The Crow Blackbird is quite as omnivorous as the Crow or Blue Jay, and whenever opportunity offers will not hesitate to attack and eat smaller birds, especially defenseless young. But his own offspring are sometimes destroyed by carnivorous enemies, the writer having once seen, in the locality mentioned above, a Fox Squirrel (*Sciurus ludovicianus* Cuvier) emerge from a hole in a large dead tree with a young blackbird in its mouth. The squirrel was attacked by a number of the blackbirds, who were greatly excited, but it paid no attention to their demonstrations, and, after descending, scampered off into the woods with its prey.

The general habits of the Bronzed Grackle are in all respects identical with those of the Purple Grackle (*Q. quiscula*), unless it may be that it is more apt to build its nest in holes of trees than the latter species. We do not think, however, that they really differ in this respect, but believe that *Q. quiscula* will probably be found to avail itself of such nesting sites when they are to be found in the localities which they frequent. Certain it is that *Q. æneus* builds its nests in exactly such situations as are supposed to be usually chosen by *Q. quiscula* whenever no holes are

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the purpose. From an almost equal familiarity with we are able to say that their notes differ decidedly, of the male during the breeding season, the "song" being very much louder and more musical, or that of its eastern relative.



FAMILY CORVIDÆ.—THE CROWS AND JAYS.

"CHAR. Primaries ten; the first short, generally about half as long as the second (or a little more); the outer four sinuated on the inner edge. The nasal fossæ and nostrils usually more or less concealed by narrow, stiffened bristles (or bristly feathers), with short appressed lateral branches extending to the very tip, all directed forwards (these bristles occasionally wanting). Tarsi scutellate anteriorly, the sides undivided (except sometimes below) and separated from the anterior plates by a narrow naked strip, sometimes filled up with small scales. Basal joint of middle toe united about equally to the lateral, generally for about half the length. Bill generally notched." (*Hist. N. Am. B.*)

The Corvidæ constitutes a very strongly marked family or group of the Oscines, the principal character being the separation of the lateral and anterior scutellæ of the tarsus by a narrow interval which is devoid of smaller scales, the conspicuous nasal tufts (these absent in a few genera) and the absence of an angle at the base of the commissure, which is invariably present in the *Icteridæ* and *Fringillidæ*. Some of the genera resemble gigantic Titmice—*Cyanocitta* corresponding to the genus *Lophophanes* and *Perisoreus* to *Parus*. The resemblance is, however, apparently a purely superficial one, there being many important differences. Thus, "the feathers at the base of the bill in the Jays, are bristly throughout, with lateral branches reaching to the very tip. In *Paridæ* these feathers are inclined to be broader, with the shaft projecting considerably beyond the basal portion, or the lateral branches are confined to the basal portion and extended forwards. There is no naked line of separation between the scutellæ on the outer side of tarsi. The basal joint of the middle toe is united almost or quite to the end to the lateral instead of half-way. The first primary is usually less than half the second, instead of rather more; the fourth and fifth primaries nearly equal and longest, instead of the fifth being longer than the fourth." (*Hist. N. Am. B.*)

Two so-called sub-families of typical Corvidæ are recognized, but they are not very well characterized, on account of the evidence of numerous intermediate forms. Taking the North American members of the family there is, however, no difficulty in recognizing the two sub-families, which may be defined as follows:

any longer than the wings, which are short, rounded and extend scarcely lower tail-coverts; these not reaching the middle of the tail. Tip of wing fourth, fifth, and sixth quills, which are longest. Tarsi usually with scutellæ on the inner side only.

SUBFAMILY CORVINÆ.—THE CROWS.

CHAR. Wings long and pointed, longer than the tail, and, when closed, nearly to its tip, extending beyond the under tail-coverts, the third, fourth, fifth, and sixth quills forming the tip of the wing.

The following diagnoses may serve to distinguish the members of North American *Corvinæ*:

A. (*Corvæ*). Bill compressed, much higher than broad; its tip compressed. Size large (i. e. over 13 inches long), color black, or mainly black.

Color black throughout; bill much compressed, the culmen arched, and the gonys convex; nasal bristles strong - - -

B. (*Nucifragæ*). Bill cylindrical, scarcely or not at all higher than its tip depressed. Size small (i. e. less than 15 inches long). Color uniform blue or with ashy on body, and black wings and tail.

Color ashy, with wings and tail mainly black. Culmen convex, slightly concave. Nostrils covered by short nasal tuft - - -

Color uniform blue, bright on the head; the throat streaked whitish. Culmen straight; gonys slightly convex. Nostrils completely exposed; no nasal tufts - - - - -

Only the first of the above genera has representatives in North America, the other two being distinctly western.

GENUS CORVUS LINNÆUS.

Corvus LINNÆUS, Syst. Nat. ed. 10, 1, 1758, 105. Type, *Corvus corax* LINN.

"GEN. CHAR. The nasal feathers lengthened, reaching to or beyond the bill. Nostrils large, circular, overhung behind by membrane, the edges reflexed where. Rictus without bristles. Bill nearly as long as the tarsus, very higher than broad at the base; culmen much arched. Wings reaching nearly to the tip of the tail, the outer four primaries sinuated internally. Tarsi long, middle toe, with a series of small scales on the middle of each side separating anterior scutellate portion from the posterior continuous plates. Sides of tail usually with nearly naked patches. Tail graduated or rounded." (*Hist. N.*

THE CROW

B. Feathers of the throat normal; i. e., short, broad, and blended. (*Crows*.)

3. *C. americanus*. Plumage glossed with purplish violet, but this hardly perceptible on head and neck. Wing 12 inches or more; tail 7 or more; culmen 1.80 or more; tarsus 2 or more.
4. *C. ossifragus*. Plumage glossed with violet-blue, more greenish on head, neck and lower parts, the gloss very perceptible throughout. Wings less than 11 inches; tail about 6.50; culmen 1.55; tarsus, 1.65.

***Corvus corax sinatus* (Wagl.)**

AMERICAN RAVEN.

Corvus carnivorus "BARTR." BAIRD, B. N. Am. 1858, 560; ed. 1860, pl. 21; Cat. N. Am. B. 1859, No. 423.

Corvus corax var. *carnivorus* B. B. & R. Hist. N. Am. B. ii, 1874, 233, 234, pl. 37, fig. 6.

Corvus corax carnivorus RIDGW. Nom. N. Am. B. 1881, No. 280.

Corvus corax WILS. Am. Orn. ix, 1825, 136, pl. 75, fig. 3.—NUTT. Man. i, 1832, 202.—AUD. Orn. Biog. ii, 1834, 476, pl. 101; Synop. 1839, 150; B. Am. iv, 1843, 78, pl. 224.—COUES, Key, 1872, 162; Check List, 1874, No. 226; 2d ed. 1882, No. 338; B. N. W. 1874, 204.

Corvus sinuatus WAGL. Isis, 1829, 748.

Corvus cacalote WAGL. Isis, 1831, 527.—BAIRD, B. N. Am. 1858, 563; Cat. N. Am. B. 1859, Nos. 423, 424.

SP. CHAR. *Adult*. Tail graduated; feathers of throat lanceolate, those of neck, jugulum, and fore part of back gray—at bases. Entire plumage glossy black, the upper parts, especially wings and tail, with rich purplish reflections. Bill and feet black; iris brown. Total length (fresh), 25 to 27 inches; extent, 49 to 51; wing (in skins), about 17; tail, 10.

The Raven is a very local and nowhere abundant bird in Illinois. The writer has seen it only in the bottoms of Big Creek and about the borders of Fox Prairie, in Richland County, where, up to 1871 at least, one or two pairs might be seen at almost any time, usually soaring in circles over the timber. It was never observed in the vicinity of Mount Carmel, nor have I ever been able to hear of its occurrence anywhere in that portion of the State except in the localities mentioned. According to Mr. Nelson it was "formerly a not uncommon resident" in the northeastern portion of the State, but "now [1876] occurs only in winter and is rare." Mr. Nelson further remarks: "Frequents the sand hills along the lake shore from the last of October until spring. The first of November, 1875, I saw several specimens near Waukegan, where they were repeatedly seen flying along the lake shore, and in winter they unite in small flocks and move from place to place."

***Corvus americanus* Aud.**

COMMON CROW.

Popular synonyms. American Crow; Tom Crow (Nevada).

Corvus corone WILS. Am. Orn. iv, 1814, 79, pl. 25, fig. 3 (nec LINN.)—SW. & RICH. F. B.—A. ii, 1831, 291.—NUTT. Man. i, 1832, 209.

Corvus americanus AUD. Orn. Biog. ii, 1834, 617; v, 1839, 477, pl. 156; Synop. 1839, 156; B. Am. iv, 1842, 87, pl. 225.—NUTT. Man. 2d ed. i, 1840, 221.—BAIRD, B. N. Am. 1858, 566; Cat. N. Am. B. 1859, No. 426.—COUES, Key, 1872, 162; Check List, 1873, No. 228; B. N. W. 1874, 206.—B. B. & R. Hist. N. Am. B. ii, 1874, 233, 234, pl. 37, fig. 5.

Corvus frugivorus "BARTS." COUES. Pt. Phil. Acad. 1873, 346; 2d Check List, 1882, No. 346.—RINGW. Nom. Am. B. 1891, No. 362.

HAB. Whole of temperate North America, except northwest coast; south to northern Mexico. Rare in the interior western districts.

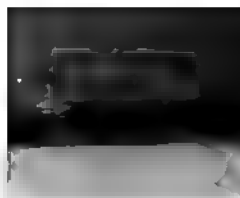
SY. CHAR. Tail slightly rounded. Feathers of throat short, blended, those of neck, etc., dusky grayish at bases. Irides. Deep black, with violet gloss, the latter fainter on lower parts. Bill and feet deep black; iris brown. Young. Dull, lusterless black. Total length (fresh specimens), 12.50-13.50; extent, 17.00-18.50; wing (in skins), about 13.00-13.50; tail, 9.00.

During the breeding season, when the plumage becomes worn or "weather-beaten," there is much less gloss to the plumage. "All specimens shot at this season do not exhibit this peculiarity, and some show it in a more marked degree than others. These specimens are characterized by the entire absence of the violet gloss on the wings and tail, those parts being of a lustreless, purplish brown color. Some specimens have the concealed bases of the feathers of a fine, violet-glossed black, and the residue of a rich bronze hue." (MEARNS, *Bull. Nutt. Orn. Club*, Vol. III, 1878, p. 71.)

So well known a bird as the Common Crow needs no special biography in a work like this. His general habits are as familiar to every one, as are his appearance and voice. There are nevertheless some traits of his character which are hardly appreciated to the extent that they should be, and it is exceedingly probable that he is a much more useful member of bird society than he is given credit for.

SUBFAMILY GARRULINÆ.—THE JAYS.





ish, the wings and tail not barred; beneath light grayish or dull whitish (in some Mexican species wholly blue underneath).

Perisoreus. Plumage exceedingly lax and "fluffy." Bill very small, scarcely half the length of the head. Color mainly dull grayish.

GENUS *PICA* BRISSON.

Pica BRISSON, Ornithologia, 1760, ii, 35. Type, *Corvus pica* LINN.

*GEN. CHAR. Tail very long, forming much more than the total length; the feathers much graduated; the lateral scarcely more than half the middle. First primary falcate, curved, and attenuated. Bill about as high as broad at the base, the culmen and gonys much curved, and about equal; the bristly feathers reaching nearly to the middle of the bill. Nostrils nearly circular. Tarsi very long; middle toe scarcely more than two thirds the length. A patch of naked skin beneath and behind the eye.

"The peculiar characteristic of this genus, in addition to the very long graduated tail, lies in the attenuated, falcate first primary. *Calocitta*, which has an equally long or longer tail, has the first primary as in the Jays generally (besides having the nostrils exposed)." (*Hist. N. Am. B.*)

The American Magpie (*P. pica hudsonica*) belongs to a circum-polar species (*P. pica*) which in the various parts of its range is differentiated into more or less strongly marked geographical races. Many ornithologists do not admit the subspecific distinctness of the American bird, and the differences from the European (typical) form are indeed slight in some specimens, though easily recognized in the majority.

A probably distinct species (*P. nuttalli*), confined to California, differs in having the bill and bare suborbital space bright yellow instead of black.

Pica pica hudsonica (Sab.)

BLACK-BILLED MAGPIE.

Popular synonym. American Magpie.

Corvus pica WILS. Am. Orn. iv, 1811, 75, pl. 35, fig. 2 (*nec* LINN.)—SW. & RICH. F. B.—A. ii, 1831, 292.—NUTT. Man. i, 1832, 219.—AUD. Orn. Biog. iv, 1838, 498, pl. 367.

Corvus hudsonicus SABINE, App. Franklin's Voy. 1823, 26, 671.

Pica hudsonica BP. 1838.—BAIRD, B. N. Am. 1858, 576; Cat. N. Am. B. 1859, No. 432.

Pica melanoleuca var. *hudsonica* COUES, Key, 1872, 164; Check List, 1873, No. 233; B. N. W. 1874, 211.

Pica caudata var. *hudsonica* ALLEN, Bull. Mus. Comp. Zool. iii, 1872, 173.—B. B. & B. Hist. N. Am. B. ii, 1871, 265, 266, pl. 38, fig. 1.

Pica rustica β *hudsonica* RIDGW. Field & Forest, June, 1877, 218.

Pica rustica hudsonica RIDGW. Nom. N. Am. B. 1881, No. 286.—COUES, 2d Check List, 1882, No. 347.

Pica melanoleuca AUD. Synop. 1839, 157; B. Am. iv, 1842, 39, pl. 237.

SP. CHAR. Bill and naked suborbital skin black. Head, neck, breast, interscapulars, lining of wing, tail-coverts, and tibiae, deep black, the pileum usually glossed with bronze-greenish. Lower parts (except as described), scapulars, and inner webs of primaries, pure white. Wings metallic greenish blue, tail rich metallic green, passing, near tips, through bronze and reddish violet into violet-blue. Total length (fresh specimens), 17.50-21.75; extent, 21.25-25.00; wing (in skins), 8.00-8.50; tail, 12.00-13.50. Feet deep black; iris brown, with bluish gray outer ring.

The occurrence of the Black-billed Magpie at present anywhere in Illinois is extremely doubtful. There is no recent record of its having been taken or even seen within the limits of the State, and its claim to a place in our fauna rests solely on Mr. Kennicott's statement that it is (or was at the time his list was published) a rare winter visitant to the extreme northern counties.

The nest of the Magpie is a very bulky and somewhat remarkable structure, composed exteriorly of sticks of various sizes, forming a spherical mass, the upper portion of which forms a canopy to the nest proper, the entrance being through one side. The eggs are usually six in number, but often as many as nine, and are of a pale olive or grayish white color, thickly speckled with olive-brown.

GENUS *CYANOCITTA* STRICKLAND.

Cyanocitta STRICKL. ANN. NAT. HIST. XV, 1845, 261. Type, *Corvus cristatus* LINN.

Cyanurus "SWAINSON," BAIRD, B. N. AM. 1858.—B. B. & R. HIST. N. AM. B. II, 1874, 264, 271, et AUCT. (nec SWAINSON.)

"GEN. CHAR. Head crested. Wings and tail blue, with transverse black bars; head and back of same color. Bill rather slender, somewhat broader than high at the base; culmen about equal to the head. Nostrils large, nearly circular, concealed by bristles. Tail about as long as the wings, lengthened, graduated. Hind claw large, longer than its digit." (HIST. N. AM. B.)

Two widely distinct species of this well-marked genus belong to



of North American Birds," Vol. II. page 272, to which the reader is referred for further information.

Cyanocitta cristata (Linn.)

BLUE JAY.

Corvus cristatus LINN. S. N. ed. 10, i, 1758, 106; ed. 12, i, 1766, 157.—WILS. Am. Orn. i, 1808, 11, pl. I, fig. 1.—NUTT. Man. i, 1832, 224.—AUD. Orn. Biog. ii, 1834, 11, v, 1839, 475, pl. 102.

Garrulus cristatus VIEILL. 1817.—SW. & RICH. F. B.—A. ii, 1831, 293.—AUD. B. Am. iv, 1842, 110, pl. 231.

Cyanurus cristatus BAIRD, B. N. Am. 1858, 580; Cat. N. Am. B. 1859, No. 434.—COUES, Key, 1872, 165; Check List, 1874, No. 234; B. N. W. 1874, 204.—B. B. & R. Hist. N. Am. B. ii, 271, 373, pl. 42, fig. 2.

Cyanocitta cristatus STRICKL. Am. Nat. Hist. 1845, 261.—RIDGW. Nom. N. Am. B. 1881, No. 289.—COUES, 2d Check List, 1882, No. 349.

HAB. Whole of eastern North America, north to 56° in the interior, west to the border of the Great Plains; resident and breeding throughout.

SP. CHAR. Crest about one third longer than the bill. Tail much graduated. General color above light purplish blue; wings and tail-feathers ultramarine blue; the secondaries and tertials, the greater wing-coverts, and the exposed surface of the tail, sharply blended with black and broadly tipped with white, except on the central tail-feathers. Beneath white; tinged with purplish blue on the throat, and with bluish brown on the sides. A black crescent on the fore part of the breast, the horns passing forward and connecting with a half-collar on the back of the neck. A narrow frontal line and loreal region black; feathers on the base of the bill blue, like the crown. Female rather duller in color, and a little smaller. Length, 12.25; wing, 5.65; tail, 5.75." (*Hist. N. Am. B.*)

Few of our birds are more numerous, and none, certainly, are better known than the Blue Jay. With us he has none of the shyness which characterizes him in the more eastern States, but makes himself at home in the door-yards and orchards, building his nest in the apple trees, in shade trees along the streets, or even among the vines trained up the sides of houses; and, with greater or less regularity, especially in winter, obtains a not inconsiderable portion of his or her daily food from the immediate vicinity of the kitchen door.

At Olney, Richland County, a Blue Jay's nest was, in the spring of 1865, found inside an old unused barn in the middle of the town, placed on a sill against the weatherboarding, in the upper part of the building.

FAMILY ALAUDIDÆ.—THE LARKS.

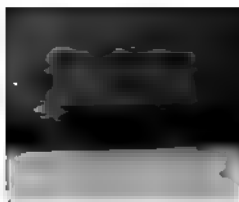
"CHAR. First primary very short or wanting. Tarsi scutellate anteriorly and posteriorly, with the plates nearly of corresponding position and number. Hind claw very long and nearly straight. Bill short, conical, frontal feathers extending along side of the bill; the nostrils concealed by a tuft of bristly feathers directed forward. Tertials greatly elongate beyond the secondaries." (*Hist. N. Am. B.*)

The Alaudidæ are preëminently a Palearctic family, being numerously represented throughout Europe and central Asia, and with many members in the more open portion of the African continent. America possesses a single species, and that of circumpolar distribution.

"The most characteristic feature of the Larks among other oscinine families is seen in the scutellation of the tarsus. The anterior half of this is covered by divided scales lapping around on the sides, but instead of the two plates which go on each side of the posterior half and unite ultimately behind as an acute ridge, there is but one, which laps round on the sides, and is divided into scales like the anterior ones, but alternating with them. The posterior edge of the tarsus is as obtuse as the anterior, instead of being very acute. There is a deep separating groove on the inner side of the tarsus; and there may be really but one plate divided transversely, the edges meeting at this place.

"In the elongated hind claw and lengthened tertials, general style of coloration, mode of life, and manner of nesting, there is decided





This being the only American genus of Larks, there is no need in the present connection, for comparison with allied genera. There is only one American species, so far as known. This one (*O. alpestris*) inhabits all the more open portions of the continent, breeding from the table-lands of southern Mexico to the shores of the Arctic Ocean, and from the region of the Great Lakes (western New York, Ohio, etc.) to the Pacific. In the various faunal districts of this extensive area, it is divided into a number of well-marked geographical races, which have been distinguished by Mr. H. W. Henshaw ("Auk," I. p. 268) as follows:*

"*O. alpestris*. Size large; wing, 4.44; tail, 3.02; tarsus, .61; bill, .50. (Average of 19 males.) Nape, lesser wing-coverts, rump, etc., deep vinaceous. Habitat, northeastern North America, Labrador, Greenland.

"*O. alpestris praticola*. Size smaller; wing, 4.17; tail, 2.93; tarsus, .83; bill, .46. (Average of 19 males.) Nape, lesser wing-coverts, rump, etc., pale vinaceous; back dead gray, in contrast; whole aspect generally paler than in true *alpestris*. Habitat, Upper Mississippi Valley and region of Great Lakes.

"*O. alpestris leucolæma*. Size about as in *alpestris*; wing 4.39; tail, 2.96; tarsus, .89; bill, .9. (Average of 12 males.) Chief character, paler; nape, lesser wing-coverts, rump, etc., very pale vinaceous; back gray, in contrast. Throat white or with but faint trace of yellow. Colors are still paler in fall; occasionally at this season there is some yellow on the throat. Habitat, British America and Alaska; western United States only in winter.

"*O. alpestris arenicola*. Size smaller than *leucolæma*; wing, 4.37; tail, 3.35; tarsus, .84; bill, .46. (Average of 16 males.) The colors similar to the last, but throat always decidedly yellow. Fall specimens are brighter, with more yellow on the throat and forehead. Habitat, Great Basin of United States and Rocky Mountains.

"*O. alpestris giraudi*. Wing, 3.78; tail, 2.57; tarsus, .80; bill, .43. (Average of 9 males.) General color above brownish gray; streaks of back very indistinct; yellow of throat bright; breast usually pale yellow. Habitat eastern and southeastern Texas.

"*O. alpestris chrysolæma*. Wing 3.98; tail, 2.91; tarsus, .83; bill, .46. (Average of 4 males.) Much deeper in color than *arenicola*. Nape, etc., deep pinkish rufous; throat deep yellow, but breast always white. Habitat, Mexico, possibly across the border into southern Arizona and New Mexico.

"*O. alpestris rubea*. Wing, 3.51; tail, 2.71; tarsus, .77; bill, .45. (Average of 11 males.) General color above, deep cinnamon or ferruginous; throat bright yellow; streaks on dorsum nearly obsolete. Habitat, California.

"*O. alpestris strigata*. Wing, 3.99; tail, 2.75; tarsus, .76; bill, .44. (Average of 2 males.) Coloration above very dark; much less cinnamon than in either *rubea* or *chrysolæma*; back distinctly striped with dusky; breast usually yellow. In some fall specimens the yellow overspreads the entire under parts. Habitat, coast region of Washington Territory and Oregon."

* The color descriptions are based on males in breeding plumage.

Otocoris alpestris (Linn.)**SHORE LARK.**

Popular synonyms. Snow Lark; Snowbird; Prairie Lark; Skylark; American Skylark; Horned Lark.

Alauda alpestris LINN. S. N. ed. 10, i, 1758, 166.

Otocoris alpestris BP Fauna Ital. Ucc. Introd. 1839 (not paged).—HENSCHAW, Auk, July, 1884, 257, 263.

Eremophila alpestris BOIE, Isis, 1828, 322.—COUES, Key, 1872, 89; Check List, 1874, No. 63; 2d Check List, 1883, No. 82; 2d Key, 1884, 261 (part).—RIDGW. NOM. N. AM. B. 1891, No. 300 (part).

Eremophila alpestris var. *alpestris* B. B. & R. Hist. N. Am. B. II, 1874, 143.

Eremophila alpestris a. *alpestris* COUES, B. N. W. 1874, 37.

Alauda cornuta WILS. AM. ORN. 1, 1806, 87 (in text).—SW. & RICH. F. B.-A. II, 1831, 121.

Eremophila cornuta BOIE, Isis, 1828, 322.—BAIRD, B. N. AM. 1858, 403; Cat. N. AM. B. 1869, No. 302.

This larger, darker colored form of the Shore Lark is an irregular winter visitant, sometimes, however, occurring in large flocks. Its habits are identical with those of the resident race.

Otocoris alpestris praticola (Hensh.)**PRAIRIE LARK.**

Popular synonyms. (Same as those of *alpestris* proper.)

Eremophila alpestris AUCT., ex-parte (*nec* BOIE).

Otocoris alpestris praticola HENSCHAW, Auk, i, No. 3, July, 1884, 364.

HAB. Mississippi Valley and region of the Great Lakes, breeding, and resident, east to western New York.

SUBSP. CHAR. *Adult male in spring* (No. 90763, U. S. Nat. Mus., Richland Co., Ill., May 16, 1893; R. Ridgway): Posterior portion of crown, occiput, nape, sides of neck and breast, lesser wing-coverts, and shorter upper tail-coverts, light vinaceous; back, scapulars, and rump, grayish brown, the feathers with darker centres, becoming darker and

Adult male in winter (No. 95583, Gainesville, Texas, Feb. 12, 1884; G. H. Ragsdale): Similar to the spring plumage, but darker, with the vinaceous somewhat obscured by grayish brown, the black by pale tips to the feathers, and yellow of throat slightly deeper. Wing, 4.20; tail, 3.00; culmen, .43; tarsus, .85.

Adult female in spring (No. 90760, Richland Co., Ill., May 25, 1884; R. Ridgway): Above grayish brown, the pileum narrowly and distinctly, the dorsal region broadly and less sharply, streaked with dusky; nape, lesser wing-coverts, and shorter upper tail-coverts dull light vinaceous, the first very indistinctly streaked. A narrow frontlet and broad superciliary stripe (the latter very sharply defined above) dull white; lores, suborbital region, and triangular patch on cheeks, dull brownish black, without sharp definition posteriorly; auriculars drab, the anterior half lighter; chin and throat white, the former faintly tinged with yellowish; jugulum crossed by a distinct band of black, narrower and less intense in color than in the male; rest of lower parts white, tinged with pale brownish on breast, the sides (especially of breast) pale isabella-brownish, the flanks indistinctly streaked with darker. Wing, 3.85; tail, 2.50; culmen, .45; tarsus, .80.

Adult female in winter (No. 85417, Mt. Carmel, Ill., Dec. 20, 1874; S. Turner): Differing from the summer plumage in being browner, and with the streaks on the pileum less distinct, the whitish frontlet obsolete, and the superciliary stripe less sharply defined; the lores, suborbital region, and cheeks dull brownish, like the auriculars, the latter with an indistinctly lighter central spot; chin and throat dull buffy white, with a tinge of straw-yellow, changing to clearer buffy white on sides of foreneck; jugulum with an indistinct blackish patch, the feathers broadly bordered with dull whitish. Whole breast and sides light isabella-color, indistinctly streaked with darker; abdomen and crissum white. Wing, 3.75; tail, 2.45; culmen, .40; tarsus, .80.

Young, first plumage (male, No. 90761, May 29, and female, No. 90792, May 16, Richland Co., Ill.; R. Ridgway): Above brownish black, the wings brownish; back dotted with sharply defined deltoid and rhomboid specks of white; pileum with similar but much more minute markings, and rump also varied in the same manner, but spots rather more transverse than on the back. Lesser and middle wing-coverts brownish black, broadly tipped with buffy white; greater coverts dusky, edged with isabella-brown, and narrowly tipped with pale buff; prevailing color of closed remiges isabella-brown, the tertials, however, darker brown, bordered with buff, this bordered internally with a dusky sub-margin. Lower parts dull white, the jugulum, sides of breast, and sides, dull isabella-buff, spotted or clouded with dusky.

Measurements: wing, 4.30; tail, 3.08; tarsus, .80; bill, .45 (largest of 16 males).

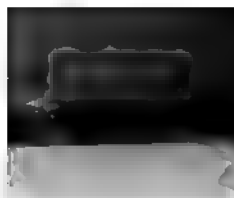
Measurements: wing, 4.10; tail, 2.80; tarsus, .78; bill, .45 (smallest of 16 females).

"The first indications of a departure from the type of the true *alpestris* are to be noticed in the region to the south and west of the Great Lakes, especially in Illinois. The birds of this region are to be distinguished as a race from *alpestris* proper by smaller size and by paler colors. Specimens in the breeding plumage are at hand from Minnesota, Wisconsin, Michigan, New York, Illinois, Indiana, Missouri, and eastern Kansas. Those from Michigan are paler than any of the others, and suggest an approach to the *leucolema* type.

"In connection with this race, it is of interest to note that it appears to be gradually extending its range and to be encroaching on a territory which by reason of recent deforestation has been made to approach the conditions this prairie-loving species seeks. Thus Dr. C. H. Merriam writes that it has made its appearance in Lewis

BIRDS OF ILLINOIS.

York, within a very few years, and appears to be
old there. The number of specimens of this form
very large, and while they show it to be a well-marked
ly when extremes of either form are compared, they
t on the one hand it intergrades with *alpestris* and
with *leucoloma*, according as the respective regions in-
ese forms are approached. Certain specimens also
more than hint that, as we go westward, it passes into
e plains. A winter specimen of this form from Texas
tent of its dispersion at this season." (HENSCHAW, l. c.)
n but by no means well-known bird is a constant resi-
at the State, except in the wooded districts, although
iduals probably nowhere remain the year round in any
It is mostly confined to the prairie portions, but has
the cultivated districts, and there is no doubt that its
tly extended of late years as the country has become
of forest and a greater area brought under cultivation.



FAMILY TYRANNIDÆ.--THE TYRANT FLYCATCHERS.

CHARACTERS. "Primaries ten. Bill in typical forms broad, triangular, much depressed, abruptly decurved and notched at tip, with long bristles along gape. Tarsi with scutellæ extending around the outer face of tarsus from the front to back; sometimes divided on the outer side. Bill with culmen nearly as long as the head, or shorter; straight to near the tip, then suddenly bent down into a conspicuous hook, with a notch behind it; tip of lower jaw also notched. Commissure straight to near the notch; gonys slightly convex. Nostrils oval and rounded, in the anterior extremity of the nasal groove, and more or less concealed by long bristles which extend from the posterior angle of the jaws along the base of the bill, becoming smaller, but reaching nearly to the median line of the forehead. These bristles with lateral branches at the base. Similar bristles are mixed in the loreal feathers and margin the chin. Tarsi short, generally less than middle toe, completely enveloped by a series of large scales, which meet near the posterior edge of the inner side, and are separated either by naked skin or by a row of small scales. Sometimes a second series of rather large plates is seen on the posterior face of the tarsus; these, however, usually on the upper extremity only. Basal joint of middle toe united almost throughout to that of the outer toe, but more than half free on the inner side; outer lateral toe rather the longer. Wings and tail variable; first quill always more than three fourths the second. The outer primaries sometimes attenuated near the tip.

"The primary characters given above will serve to distinguish the North American *Tyrannidæ* from their allies; the essential features consisting in the peculiarity of the scales of the tarsus and the ten primaries. In the *Sylviolidæ* there are species as truly "flycatching," and with a depressed bristly bill, but the nine (not ten) primaries, and the restriction of the scales to the anterior face of the tarsus, instead of extending entirely round the outer side, will readily separate them." (*Hist. N. Am. B.*)

The following analysis of genera is taken from "History of North American Birds" (Vol. II, pp. 807, 808), those belonging exclusively to the southwestern border of the United States being omitted.

TYRANNI. Size large: colors generally brilliant; crown with a brighter colored crest, usually concealed; outer primaries abruptly contracted or attenuated near the tip; upper scales of tarsus usually continuing round on the outside and behind. Nest in trees, very bulky, containing much downy material; eggs white or pinkish, with ovate dots of rich brown, of various shades.

Milvulus. Tail exceedingly forked and lengthened; more than twice as long as the wings.

Tyrannus. Tail moderate; nearly even or slightly forked; less than the wings.

1. Tail lengthened; about equal to the wings, which reach :
Myiarchus. Tarsus equal to the middle toe, which is decidedly longer than the hind toe. Tail even or rounded. Throat pale ash, rest of the plumage generally, the primaries edged with rufous, and inner webs more or less of the same color. Nest in a cavity of a tree; eggs whitish, with intricate tangled lines and streaks of several effect salmon-color.
Sayornis. Tarsus rather longer than the middle toe, which is longer than the hind toe. Tail slightly forked. Bill very narrow, nor distinct bands on wings; both mandibles black. Rocks or parts of buildings, very compact and bulky, constitute its composition; eggs pure white, immaculate, or with dots near larger end.
2. Tail decidedly shorter than the wings, which reach beyond the middle toe.
Contopus. Hind toe much longer than the lateral. Tail considerably long, pointed; much longer than the tail, reaching beyond the latter; first quill about equal to the fourth. Bill broad and white, sometimes with a yellowish tinge beneath. Lining colored. Nest saucer-shaped, compact, and very small, set upon a thick branch; eggs cream-colored, with a zone of light blotches round the large end.
3. Tail shorter than the wings, as in the last. Tarsus considerably longer than the middle toe; hind toe much longer than the lateral. Tail times slightly rounded, but little shorter than the wings; shorter than the fourth.
Empidonax. Head moderately crested; tail about even. Bill reaching about half way to tip. Legs stout. A conspicuous light distinct band, on the wing. More or less tinged with sulphur parts. Nest variously constructed, deeply cup-shaped, constructed of either grassy or fibrous and downy material, and twigs or lodged in a crotch between thick branches; eggs white or with blotches of brown round larger end.

GENUS **TYRANNUS** CUVIER.

Tyrannus CUVIER, Leçons Anat. Comp. 1799, tabl. II. Type, *Lanius* L.

GEN. CHAR. Tyrant-birds of large medium, or rather small size, with bills, strongly bristled rectus, even, emarginated, or slightly rounded to the outer primaries abruptly narrowed. Crown with a concealed callosity (orange, or yellow); plumage without streaks or bars.

The above brief diagnosis, although not

more elongated, less depressed, the outlines straighter, while there are various other differences. Upon the whole, the genus may be considered quite a natural group.

The species vary among themselves not only in colors, but in other respects also, each one having its own peculiarities of external form, so that were all identical in coloration they could even then be readily distinguished. Attempts have been made to subdivide the genus, but all have proved unsatisfactory. There is, truly, a vast difference in size and form between the robust, almost gigantic, *T. magnirostris*, and the little *T. aurantio-atrocristatus*; but as other species are variously intermediate, it seems best to consider the variations of form and size in this genus as of mainly specific importance.

The single eastern species and two western ones which may be expected to occur in Illinois differ from one another as follows:

A. Lower parts white, upper parts blackish.

1. *T. tyrannus*. Wings black, feathers margined with white. Tail black, sharply tipped with white.

B. Lower parts yellow, ashy anteriorly; upper parts ashy-olive.

2. *T. verticalis*. Wings brownish dusky, feathers indistinctly edged with paler. Tail deep black, the outer webs of lateral feathers pure white, in abrupt contrast. Throat and jugulum pale ashy-gray.
3. *T. vociferans*. Wings light brownish gray, the feathers with paler edges. Tail dull black, the tip dull grayish, as are also the outer webs of the lateral feathers. Throat and jugulum deep slate-gray.

***Tyrannus tyrannus* (Linn.)**

KINGBIRD.

Popular synonyms. Bee Bird; Bee Martin.

Lanius tyrannus LINN. S. N. ed. i, 1758, 94; ed. 12, i, 1766, 136.

Muscicapa tyrannus WILS. Am. Orn. i, 1808, 66, pl. 13, fig. 1.—NUTT. Man. i, 1832, 265.—

AUD. Orn. Biog. i, 1840, 453; v, 1842, 420, pl. 79; Synop. 1839, 40; B. Am. i, 1839, 204, pl. 56.

Tyrannus tyrannus JORD. Man. Vert. ed. 4, 1884, 96.

Lanius tyrannus, var. *γ*, *carolinensis* GMEL. S. N. i, 1788, 302.

Tyrannus carolinensis TEMM. Tabl. Meth. 1836, 24.—BAIRD. B. N. Am. 1858, 171; Cat. N. Am. B. 1859, No. 124.—COUES, Key, 1872, 169; Check List, 1874, No. 242; 2d ed. 1882, No. 368; B. N. W. 1874, 235.—B. B. & R. Hist. N. Am. B. II, 1874, 316, pl. 43, fig. 4.—RIDGW. Nom. N. Am. B. 1881, No. 304.

HAB. Eastern North America, north to 57° in the interior, west, regularly, to and including the Rocky Mountains, and irregularly to the Pacific coast, especially along northern boundary of the United States; in winter, the whole of Middle America, and south to Peru and Bolivia; Cuba and Bahamas.

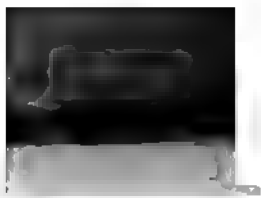
"SP. CHAR. *Adult.* Above black, becoming plumbeous on the back, scapulars, and rump; large wing-coverts and remiges edged with whitish; upper tail-coverts bordered with white, and tail broadly tipped with the same. Below pure white, strongly shaded with ash-gray across the jugulum. Middle of the crown with a concealed patch of bright orange-red. *Young.* Above dusky brownish-slate, the wing-coverts bordered with pale

fulvous, the remiges with dull whitish; upper tail-coverts bordered with pale rusty; tail tipped with pale fulvous, or brownish white. Beneath as in the adult, but jugulum tinged with pale fulvous. No colored patch on vertex.

Wing, 4.45-4.75; tail, 3.40-3.75; bill, from nostril, .50-.57, depth at base, .24-.27; width, .37-.40; tarsus, .70-.78; middle toe, .55-.60.

The Bee Bird or Bee Martin is a very common bird throughout the State, and its general habits are well known. It is a summer resident, arriving in April and departing early in September.

"No one of our common birds," says Dr. Brewer, "possesses more strongly marked characteristics of manners and habits than this species. Its pugnacious disposition during the breeding-season, the audacious boldness with which it will attack any bird larger than itself, the persistent tenacity with which it will continue these attacks, and the reckless courage with which it will maintain its unequal warfare, are well-known peculiarities of this interesting and peculiar species. Its name, Kingbird, is given it on the supposition that it is superior to all other birds in these contests. My own observations lead me to the conclusion that writers have somewhat exaggerated the quarrelsome disposition of this bird. I have never, or very rarely, known it to molest or attack any other birds than those which its own instinct prompts it to drive away in self-defense, such as Hawks, Owls, Eagles, Crows, Jays, Cuckoos and Grakles. These it will always attack and drive off to quite a distance from their nests. Nothing can be more striking than the intrepidity with which one of these birds will pounce upon and harass birds vastly larger and more powerful than itself. The Kingbird is always prompt to perceive the approach of one of these enemies, and always rushes out to meet it. Mounting in the air high above, it pounces down upon its back, upon which it will even rest, furiously pecking at the exposed parts of its crest, and only leaving it to descend again and



the first primary shorter than the sixth. Head with elongated lanceolate distinct feathers. Above brownish olive, throat ash, belly yellow. Tail and wing feathers varied with rufous. (*Hist. N. Am. B.*)

This genus is one of the most strongly marked in the entire family. This species are of exceptionally irritable, pugnacious disposition, continually quarreling among themselves, and during the breeding-season, attacking all larger birds which approach the vicinity of the nest. The latter is placed within holes in trees, and the eggs are remarkable for the fine and intricate pencilings of various rich shades of brown upon a creamy ground. In fact they are among the most striking in their color and markings of all bird's eggs.

A single species (*M. crinitus*) inhabits eastern North America, another (*M. cinerascens*) replacing it in the west.

***Myiarchus crinitus* (Linn.)**

CRESTED FLYCATCHER.

Popular synonyms. Great Yellow-bellied Flycatcher; Great crested Flycatcher.

Muscicapa crinita LINN. S. N. ed. 12, 1, 1766, 325.—WILS. Am. Orn. II, 1810, 75, pl. 13, fig. 2.—NUTT. Man. 1, 1832, 371.—AUD. Orn. Biog. II, 1834, 176; v. 1839, 423, pl. 129; Synop. 1839, 40; B. Am. I, 1840, 209, pl. 57.

Tyrannus crinitus SW. 1823.—NUTT. Man. 2d ed. 1840, 302.

Myiarchus crinitus CAB. 1855.—BAIRD, B. N. Am. 1858, 128; Cat. N. Am. B. 1859, No. 130.

—COUES, Key, 1872, 171; Check List, 1874, No. 247; 2d ed. 1882, No. 373; B. N. W. 1874, 238.—B. B. & R. Hist. N. Am. B. II, 1874, 334, pl. 43, fig. 8.—RIDG. Nom. N. Am. B. 1881, No. 312.

HAB. Eastern United States and British Provinces, but rare northeastward beyond the Connecticut valley; west to the edge of the Great Plains. In winter, Guatemala, and south to Costa Rica; Cuba?

“SP. CHAR. Head with a depressed crest. Third quill longest; fourth and second successively but little shorter; first a little longer than seventh; much shorter than sixth. Tail decidedly rounded or even graduated; the lateral feathers about .25 of an inch shorter. Upper parts dull greenish olive, with the feathers of the crown and to some extent of the back showing their brown centres; upper tail-coverts turning to pale rusty brown. Some feathers at the base of the bill, lorea, sides of the head as high as the upper eyelid, sides of the neck, throat, and forepart of the breast, bluish ashy; the rest of the lower parts, including axillaries and lower wing-coverts, bright sulphur-yellow. A pale ring round the eye. Sides of the breast and body tinged with olivaceous. The wings brown; the first and second rows of coverts, with the secondary and tertial quills, margined externally with dull white, or on the latter slightly tinged with olivaceous yellow. Primaries margined externally for more than half their length from the base with ferruginous; greater portion of the inner webs of all the quills very pale ferruginous. The two middle tail-feathers light brown, shafts paler; the rest have the outer web and a narrow line on the inner sides of the shaft brown, pale olivaceous on the outer edge; the remainder ferruginous to the very tip. Outer web of exterior feather dull brownish yellow. Feet black. Bill dark brown above and at the tip below; paler towards the base. Length, 8.75; wing, 4.35; tail, 4.10; tarsus, .85.”

known. It is essentially a woodland species, being found in the wildest parts of the forest, where its shrill, quacking notes are in accord with the surroundings. It is confined to such localities, however, but frequently taken in orchards, even in the midst of towns, and occurs rather a familiar bird. At Mount Carmel several pairs were seen in summer inside the town limits, and one pair raised a nest which was built in a window corner of the court building, which stood in the very centre of the town. The construction, however, of the nest of this species is a hole in a natural cavity or a deserted Woodpecker's hole. The nest is composed of a very miscellaneous assortment of material, as dried grasses, feathers, hair, etc., to which is usually added one or more cast-off snake skins, perhaps for ornament. The eggs are probably more remarkable for their coloring and markings than those of any other North American bird, being "scratched" with a rich purple and brown on a buffy or cream-colored ground.

While rarely attacking birds of large size, the Grebe is a tyrant among the smaller species, charging impetuosity upon every one which comes in the immediate vicinity of the nesting place.

GENUS **SAYORNIS** BONAPARTE.

Sayornis BONAP. Coll. Delattre, 1854, 87. Type, *Tyrannula nigricans* Aud. *Aulanax* CABANIS, Journal für Orn. 1856, 1. Same type.

"GEN. CHAR. Head with a blended depressed moderate crest. Bill longer than middle toe, which is scarcely longer than the hind toe. Breadth of base about half the culmen. Tail, broad, long, slightly forked. Wings, which are moderately pointed, and reach to the middle of the tail shorter than sixth." (*Hist. N. Am. B.*)

This genus agrees with *Myiarchus* in the length of the bill, but has a longer tarsus and a different style of coloration.

One species (*S. nigricans*) is confined to the Pacific coast and the southern border, and thence south into Mexico. Another (*S. saya*) has a very extensive distribution over the western portions of the continent, and has even been once taken in Illinois. Our list therefore includes two of the three species, which may be distinguished as follows:

A. Belly white or sulphur-yellowish.

1. *S. phœbe*. Above grayish olive, the head much darker; beneath dull white or sulphur-yellowish, the sides of the breast grayish.

B. Belly tawny ochraceous

2. *S. saya*. Above brownish gray, the tail black; throat and breast grayish, rest of lower parts tawny ochraceous.

Sayornis phœbe (Lath.)

PHŒBE.

Popular synonyms. Pewee; Barn Pewee or Phœbe; Bridge Pewee or Phœbe; Pewit Flycatcher.

Muscicapa fusca GMEL. S. N. i, 1788, 93 (*nec* BODD. 1783).—AUD. Orn. Biog. ii, 1834, 122; v, 1839, 424, pl. 120; Synop. 1839, 43; B. Am. i, 1840, 223, pl. 63.

Tyrannus fuscus NUTT. Man. ed. 2, i, 1840, 312.

Sayornis fuscus BAIRD, B. N. Am. 1858, 184; Cat. N. Am. B. 1859, No. 135.—COUES, Key, 1872, 172; Check List, 1874, No. 252; 2d ed. 1882, No. 379; B. N. W. 1874, 241.—B. & R. Hist. N. Am. B. ii, 1874, 343, pl. 45, fig. 2.—RIDGW. Nom. 1881, No. 315.

Muscicapa atra GMEL. S. N. i, 1788, 946 (*nec* MULL. 1776).—NUTT. Man. i, 1832, 278.

Muscicapa phœbe LATH. Ind. Orn. ii, 1790, 489.

Sayornis phœbe STEJN. Auk. ii, Jan. 1885, 51.

Muscicapa nunicola WILS. Am. Orn. ii, 1810, 78, pl. 13, fig. 4.

HAB. Eastern United States and British Provinces, west to the edge of the Great Plains; winters in more southern United States (north to about 38°), and eastern Mexico south to Vera Cruz; Cuba.

"SP. CHAR. Sides of breast and upper parts dull olive-brown, fading slightly towards the tail. Top and sides of head dark brown. A few dull white feathers on the eyelids. Lower parts dull yellowish white, mixed with brown on the chin, and in some individuals across the breast. Quills brown, the outer primaries, secondaries, and tertials edged with dull white. In some individuals the greater coverts faintly edged with dull white. Tail brown; outer edge of lateral feathers dull white; outer edges of the rest like the back. Tibiæ brown. Bill and feet black. Bill slender, edges nearly straight. Tail rather broad and slightly forked. Third quill longest; second and fourth nearly equal; the first shorter than sixth. Length, 7 inches; wing, 3.42; tail, 3.30.

"In autumn, and occasionally in early spring, the colors are much clearer and brighter. Whole lower parts sometimes bright sulphur-yellow; above, greenish olive; top and sides of the head tinged with sooty. In the young of the year the colors are much duller; all the wing-coverts broadly tipped with light ferruginous, as also the extreme ends of the wing and tail-feathers. The brown is prevalent

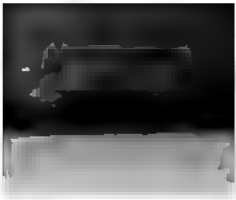
BIRDS OF ILLINOIS.

throat and breast; the hind part of the back, rump, and
iridescent." (*Hist. N. Am. B.*)

The Phoebe is one of that charming coterie of the
birds who cheer the abode of man with their presence.
More than the Chipping Sparrow, the Catbird, the Barn
Swallow, or the Bluebird, there are still few farm-yards with-
out Phobes, who do the farmer much service by lessening
the loss of flies about the barn, and by calling him to his work in
their cheerful notes.

Swallow: "This species is attracted both to the vicinity
of the neighborhood of dwellings, probably for the
abundance of insects in either situation. They
are a confident, and gentle bird, attached to localities, and
return year after year. They build in sheltered situa-
tions, under a bridge, under a projecting rock, in the porches of
buildings, in similar situations. I have known them to build on
the porch of a dwelling; against the wall of a rail-
road station, within reach of the passengers; and under a projecting
eave, in full view of the family, entirely unmoved by the
noise, and the latter at meal time."

Sayornis saya (Bonap.)



"The young of the year have the upper parts slightly tinged with ferruginous; two broad (ferruginous) bands on the wings formed by the tips of the first and second coverts. The quills and tail rather darker than in adult specimen.

"Autumnal specimens are simply more deeply colored than spring examples, the plumage softer and more blended." (*Hist. N. Am. B.*)

According to Mr. Nelson (*Bull. Essex Inst.* Vol. VIII., 1876, p. 119), "Two specimens of this species are registered in the catalogue of birds in the Museum of the Northwestern University, at Evanston, from 'West Northfield, Illinois, collected by R. Kennicott.' These specimens are not in the collection at present. Dr. Hoy has also taken it in Wisconsin."

GENUS *CONTOPUS* CABANIS.

Contopus CABANIS, Journ. für Ornith. III, Nov. 1885, 479. Type *Muscicapa virens* LINN.

"GEN. CHAR. Tarsus, very short, but stout; less than the middle toe and scarcely longer than the hinder; considerably less than the culmen. Bill quite broad at the base; wider than the culmen. Tail moderately forked. Wings very short and much pointed, reaching beyond the middle of tail; the first primary about equal to the fourth. All the primaries slender and rather acute, but not attenuated. Head moderately crested. Color olive above, pale yellowish beneath, with a darker patch on the sides of the breast. Under tail-coverts streaked in most species. A tuft of cottony white feathers on each side of the rump (concealed in most species).

"This genus is pre-eminently characterized among North American Flycatchers by the very short tarsi and the long and much pointed wings.

"In most other genera as *Sayornis*, *Myiarchus* and *Empidonax*, a trace of cottony tuft may be discovered by careful search on the flanks; but in the present genus, there is, in addition, the tufts on the rump, not found in the others." (*Hist. N. Am. B.*)

Of the four known North American species only two have not been recorded from the region east of the Mississippi River. One of them (*C. pertinax* CAB.) occurs only along the southern border in Arizona, and therefore cannot reasonably be expected; another, however (*C. richardsonii* SWAINS.), is of very general distribution throughout the west, and may very possibly sometimes stray east of the Missouri River. This species is therefore included in the synopsis along with the two which properly belong there.

A. Size large (wing 3.90 or more); side of rump with a conspicuous tuft of white cottony feathers.

1. *C. borealis*. Above brownish slaty, darker on the head; beneath white medially, dark grayish, in marked contrast, laterally. Wing, 3.90-4.50; tail, 2.90-3.50.

Contopus borealis (Swains.)

OLIVE-SIDED FLYCATCHER.

Tyrannus borealis Sw. F. B. - A. ii, 1831, 141, pl. 35.

Contopus borealis BAIRD, B. N. Am. 1858, 188; Cat. N. Am. B. 18

Key, 1872, 173; Check List, 1874, No. 253; 2d ed. 1882, No. 380; B. N.

R. Hist. N. Am. B. ii, 1874, 353, pl. 44, fig. 1. — RIDGW. Nom. N. 1

Muscicapa inornata "COOP. & NUTT.," NUTT. Man. i, 1832, 285.

Muscicapa cooperi NUTT. Man. i, 1832, 282. — AUD. Orn. Biog. ii, 1834, 1839, 41; B. Am. i, 1840, 212, pl. 58.

Tyrannus cooperi BP. 1838. — NUTT. Man. 2d ed. i, 1840, 298.

HAB. Whole of temperate North America, but colder regions only
ing from northern border of the United States northward, farther sout
tain ranges, especially westward; also breeding in more elevated di
and migrating south as far as Veragua.

"SP. CHAR. Wings long, much pointed; the second quill longest
than the third. Tail deeply forked. Tarsi short. The upper parts asl
darker brown centres of the feathers; this is eminently the case on th
the sides of the head and neck, of the breast and body, resembling the
edges of the feathers tinged with gray, leaving a darker central streak.
narrow line down the middle of the breast and body, abdomen, and l
white or sometimes with a faint tinge of yellow. The lower tail-c
streaked with brown in the centre. On each side of the rump, gener
the wings, is an elongated bunch of white silky feathers. The wings
brown, the former with the edges of the secondaries and tertials edged
The lower wing-coverts and axillaries grayish brown. The tips of th
tail-feathers rather paler. Feet and upper mandible black, lower mand
young of the year similar, but the color duller; edges of wing-feathers
of grayish white. The feet light brown. Length, 7.50; wing, 4.33; tail,
(Hist. N. Am. B.)

The Olive-sided Flycatcher is confined almost exclu
northern coniferous forests, including their southern ext
the higher mountain ranges, the principal of which it fo
Mexico and Guatemala. Regarding its occurrence in
only knowledge we have is Mr. Nelson's note (*Bull. Ess*
1876, p. 113), to the following effect:

"Not an uncommon migrant. from May 15th to Oct 1st

Contopus virens (Linn.)**WOOD PEWEE.**

Muscicapa virens LINN. S. N. ed. 12, i, 1766, 327.—NUTT. Man. i, 1832, 235.—AUD. Orn. Biog. ii, 1834, 93; v, 1839, 425, pl. 115; Synop. 1839, 42; B. Am. i, 1840, 231, pl. 64.

Tyrannus virens NUTT. Man. 2d ed. i, 1840, 316.

Contopus virens CAB. 1855.—BAIRD, B. N. Am. 1858, 190; Cat. N. Am. B. 1859, No. 139.—COUES, Key, 1872, 173; Check List, 1874, No. 255; 2d ed. 1882, No. 382; B. N. W. 1874, 245.—B. B. & R. Hist. N. Am. B. ii, 1874, 357, pl. 44, fig. 3.—RIDGW. Nom. N. Am. B. 1881, No. 320.

Muscicapa rapax WILS. Am. Orn. ii, 1811, 81, pl. 13, fig. 5.

HAB. Eastern United States and British Provinces, west to edge of the Great Plains, breeding throughout. In winter, eastern Mexico, and Central America, south to Guatemala. (Said by AUDUBON to winter in Louisiana and Florida, but this statement is unconfirmed by later observers.)

"SP. CHAR. The second quill longest; the third a little shorter; the first shorter than the fourth. The latter nearly .40 longer than the fifth. The primaries more than an inch longer than the secondaries. The upper parts, sides of the head, neck, and breast, dark olivaceous brown, the latter rather paler, the head darker. A narrow white ring round the eye. The lower parts pale yellowish, deepest on the abdomen; across the breast tinged with ash. The pale ash sometimes occupies the whole of the breast, and even occasionally extends to the chin. It is also sometimes glossed with olivaceous. The wings and tail dark brown; generally deeper than in *S. fuscus*. Two narrow bands across the wing, the outer edge of the first primary and the secondaries and tertials, dull white. The edge of the tail-feathers like the back; the outer one scarcely lighter. Upper mandible black; the lower yellow, but brown at the tip. Length, 6.15; wing, 3.50; tail, 3.05.

"A large series shows considerable variations; autumnal specimens have a more appreciable tinge of yellow on the lower parts, while summer individuals are more grayish." (*Hist. N. Am. B.*)

Modest and retiring in its habits, plain in dress, and quiet in manner, this little bird, although one of the most abundant species, is by no means well known. If noticed at all, it is generally confounded with the common Pewee (*Sayornis phæbe*); but a little observation is sufficient to show how very distinct they are. The Wood Pewee will sit almost motionless for many minutes, in an erect position, on some dead twig or other prominent perch, patiently watching for its insect prey. While in position is apparently so fixed, however, its eyes are constantly on the alert, and close watching will show that the bird now and then turns its head as its glance follows the course of some distant insect, while anon the feathers of the crown are raised, so as to form a sort of blunt pyramidal crest. This sentinel-like attitude of the *Contopus* is in marked contrast to the restless motion of *Sayornis*, who, even if perched, keeps its tail constantly in motion, while the bird itself seldom remains long in a fixed position. The notes of the two

... of the true rewee. Says Dr. Brewer (*Hist*
II., p. 858):

"This species, like all its family, is a very expectant, even the most minute, and has a wonderful perception of their near presence, even when the light is gone and in the deep gloom of the thick woods. It sits at the end of a low dead limb, from which it darts at insects, sometimes for a single individual, which produces a peculiar snap of its bill; and, frequently meeting insects, it keeps up a constant snapping sound as it passes. When it returns to its post to resume its watch. During this occasionally is heard to twitter, with a quivering movement of its head and tail, and more rarely to enunciate a louder but more plaintive note, sounding like 'péé-é.'"

The nest of this species, which is always "saddled" and attached to a rather stout branch, usually lichen-covered, is one of the most elegant examples of bird architecture. It is usually so much like a natural protuberance or knotty excrescence, that but for its betrayal by the color it seldom be discovered. It is a very compact saucer-shaped with thick walls, and the whole exterior is a beautiful green, gray, and glaucous lichens. The eggs themselves are very handsome, having a rich but delicate cream-color and ornamented by a "wreath" round the larger end of a reddish-brown, purple, and lilac spots.

GENUS **EMPIDONAX** CABANIS.

Empidonax CABANIS, Journal für Ornithologie, III, Nov. 1855, 480.
pusilla SWAINS.

"GEN. CHAR. Tarsus lengthened, considerably longer than the bill, middle toe, which is decidedly longer than the hind toe. Bill variable, sometimes forked, even, or rounded; a little shorter only than the wings, which are rounded; the first primary much shorter than the second."

The following species occur, more or less abundantly, throughout the State:

A. Tail emarginated.

1. *E. flaviventris*. Above olive-green, beneath light greenish yellow, shaded with olive across the breast. Wing, 2.45-2.75; tail, 2.30-2.55.
2. *E. minimus*. Above olive-gray, beneath whitish, slightly shaded with gray across the breast. Wing-bands grayish white. Wing, 2.25-2.65; tail, 2.25-2.50; bill, from nostril, .28-.30; width at base, .22-.25.

B. Tail even or slightly rounded.

3. *E. pusillus traillii*. Above brownish olive, or grayish olive-brown, beneath white, the sides of the breast strongly shaded with the color of the back, the flanks and crissum tinged with sulphur-yellow. Wing-bands dull grayish, or brownish gray. Wing, 2.60-2.90; tail, 2.45-2.75.
4. *E. acadicus*. Above grayish green, or greenish gray, beneath white, shaded with olive on sides of breast. Wing-bands buffy white, or pale buff. *Young transversely mottled above.* Wing, 2.80-3.15; tail, 2.50-2.85.

Empidonax flaviventris Baird.

YELLOW-BELLIED FLYCATCHER.

Tyrannula flaviventris WM. M. & S. F. BAIRD, Pr. Phil. Ac. i, 1843, 283.

Muscicapa flaviventris AUD. B. Am. vii, 1844, 341, pl. 490.

Empidonax flaviventris BAIRD, B. N. Am. 1858, 198; Cat. N. Am. B. 1859, No. 144.—COUES Key, 1872, 175; Check List, 1874, No. 259; 2d ed. 1882, No. 388; B. N. W. 1874, 255.—B. B. & R. Hist. N. Am. B. ii, 1874, 378, pl. 44, fig. 12.—RIDGW. Nom. N. Am. B. 1881, No. 322.

HAB. Eastern North America, breeding from northern border of United States northward (for an undetermined distance); in winter, eastern Mexico, and south to Colombia. Accidental in Greenland. (Replaced in western United States by an allied, but apparently distinct species, the *E. difficilis* BAIRD.)

"SP. CHAR. Second, third and fourth quills nearly equal; first intermediate between fifth and sixth. Tail nearly even, slightly rounded. Tarsi long. Above bright olive-green (back very similar to that of *Vireo noveboracensis*); crown rather darker. A broad yellow ring around the eye. The sides of the head, neck, breast and body, and a band across the breast, like the back, but lighter; the rest of the lower parts bright greenish sulphur-yellow; no white or ashy anywhere on the body. Quills dark brown; two bands on the wing formed by the tips of the middle and secondary coverts, the outer edge of the first primary and of the secondaries and tertials pale yellow, or greenish yellow. The tail-feathers brown, with the exterior edges like the back. The bill dark brown above, yellow beneath. The feet black. In the autumn the colors are purer, the yellow is deeper, and the markings on the wings of an ochrey tint. Length, 5.15; wing, 2.83; tail, 2.45." (*Hist. N. Am. B.*)

"First plumage: male. Above uniform yellowish olive. Beneath dull yellow, with a brownish cast, tinged strongly with olive upon the throat, breast and sides. Wing-bands brownish yellow. Altogether very similar to the adult. From a specimen in my collection shot at Upton, Me, August 4, 1874." (BREWSTER, Bull. Nutt. Orn. Club, Oct. 1876, p. 178.)

similar to other species of the genus, though in composition of its nest it differs from all except *E. difficilis* Baird. The nest is built of moss and soft materials, and is placed often in old log or stump, near the ground. The eggs of *acadicus* and *E. traillii*, are spotted.

Empidonax minimus Baird.

LEAST FLYCATCHER.

Muscicapa acadica "Gm." NUTT. Man. 1, 1832, 288 (nec Gmel.).

Tyrannula minima WM. M. & S. F. BAIRD, Pr. Phil. Academy,

Muscicapa minima AUD. B. N. Am. vii, 1844, 343, pl. 491.

Empidonax minimus BAIRD, B. N. Am. 1858, 195; Cat. N. Am. B.

Key, 1872, 175; Check List, 1874, No. 258; 2d ed. 1882, No. 377;

& R. Hist. N. Am. B. ii, 1874, 372, pl. 44, figs. 10.—RIDGW. Nom

HAB. Eastern North America, breeding from northern border to subarctic districts; west regularly to border of Great Plains, Rocky Mountains. In winter, eastern Mexico, Guatemala and Honduras.

"SP. CHAR. Second quill longest; third and fourth but little shorter than first intermediate between fifth and sixth. Tail even. Above of the head, becoming paler on the rump and upper tail-coverts. Throat most strongly olivaceous. The nape (in some individuals) and sides with ash. A ring around the eye and some of the loreal feathers throat white. The sides of the throat and across the breast dull latter sometimes nearly obsolete; sides of the breast similar to the tint; middle of the belly very pale yellowish white, turning to pale on the sides of the belly, abdomen, and lower tail-coverts. Wings broad with bands on the wing, formed by the tips of the first and second coverts of brown. The edge of the first primary, and of the secondary Tail rather lighter brown, edged externally like the back. Feathered tail, with the ends rather blunt. In autumn the white parts are yellow. Length, about 5.00; wing, 2.65; tail, 2.50. Young with a grayish-white wing-bands." (*Hist. N. Am. B.*)

"First plumage: male. Similar to the adult, but with a strongly faintly indicated collar of ashy brown across the nape. Wing-bands beneath almost precisely similar to the adult, with perhaps a slight cast upon the abdomen and crissum. Distinguishable from *E. traillii* corresponding stages by the decidedly paler and less yellowish upper by the nearly clear ashy on the sides of the breast. From a specimen taken at Cambridge, Mass., July 2, 1880.

known except to the ornithologist. In Illinois it is a summer resident in the northern portions and a migrant southward; but the southern limit of its breeding range is at present unknown.

Empidonax pusillus traillii (Aud.)

TRAILL'S FLYCATCHER.

Muscicapa traillii AUD. Orn. Biog. 1, 1832, 236; v, 1839, 426, pl. 45; Synop. 1839, 43; B. Am. 1, 1840, 234, pl. 65.

Tyrannus traillii NUTT. Man. 2d ed. 1, 1840, 323.

Empidonax traillii BAIRD, B. N. Am. 1853, 193; Cat. N. Am. B. 1862, No. 140.—COUES, Key, 1872, 175; Check List, 1874, No. 257; B. N. W. 1874, 252.

Empidonax pusillus var. *traillii* B. B. & R. Hist. N. Am. B. II, 1874, 368, pl. 44, fig. 8.

Empidonax pusillus traillii RIDGW. Nom. N. Am. B. 1881, No. 325 a.—COUES, 2d Check List, 1882, No. 385.

HAB. Eastern North America, breeding from Missouri, Illinois, Ohio, and New England northward (for an undetermined distance); wintering in eastern Middle America, south to Colombia.

"SP. CHAR. Third quill longest; second scarcely shorter than fourth; first shorter than fifth, about .35 shorter than the longest. Primaries about .75 of an inch longer than secondaries. Tail even. Upper parts dark olive-green; lighter under the wings, and duller and more tinged with ash on nape and sides of the neck. Centre of the crown-feathers brown. A pale yellowish white ring (in some specimens altogether white) round the eye. Loral feathers mixed with white. Chin and throat white; the breast and sides of throat light ash tinged with olive, its intensity varying in individuals, the former sometimes faintly tinged with olive. Sides of the breast much like the back. Middle of the belly nearly white; sides of the belly, abdomen, and the lower tail-coverts, sulphur-yellow. The quills and tail-feathers dark brown, as dark (if not more so) as these parts in *C. virens*. Two olivaceous yellow-white bands on the wing, formed by the tips of the first and second coverts, succeeded by a brown one; the edge of the first primary and of secondaries and tertials a little lighter shade of the same. The outer edge of the tail-feathers like the back; that of the lateral one rather lighter. Bill above dark brown; dull brownish beneath. Length, nearly 6.00; wing, 2.90; tail, 2.60. Young with the wing-bands ochraceous instead of grayish olive.

"This species is most closely related to *E. minimus*, but differs in larger size and the proportions of quills. The middle of the back is the same color in both, but instead of becoming lighter and tinged with ash on the rump and upper tail-coverts, these parts very rarely differ in color from the back. The markings on the wings, instead of being dirty white, are decidedly olivaceous grayish. The yellow of the lower parts is deeper. The tail-feathers are rather broad, acuminate, and pointed; in *minimus* they are narrow and more rounded, while the tail itself is emarginated, instead of square, as in the present bird. The bill is larger and fuller. The legs are decidedly shorter in proportion." (*Hist. N. Am. B.*)

observer. The two are often found in the same place. The
Flycatcher is of a more familiar disposition, and
in close proximity to dwellings, especially in the
other is seldom seen in such places.

Empidonax acadicus (Gmel.)

ACADIAN FLYCATCHER.

Popular synonym. Green-crested Flycatcher.

Muscicapa acadica GMEL. S. N. 1, 1788, 947.—AUD. Orn. Biog. i
pl. 144; Synop. 1839, 42; B. Am. 1, 1840, 221, pl. 62.

Empidonax acadicus BAIRD, B. N. Am. 1858, 197; Cat. N. Am. i
Key, 1872, 174; List, 1874, No. 256; 2d ed. 1882, No. 384; B. N. W
Hist. N. Am. B. II, 1874, 374, pl. 44, fig. 11.—RIDGW. Nom. N. Am.
Muscicapa querula "VIEILL." WILS. Am. Orn. II, 1810, 77, pl. 13.

HAB. Eastern United States, breeding nearly throughout, but
where scarcely found beyond the Connecticut valley; north, in the
West. In winter, Cuba and Yucatan, possibly Gulf States also.

"SP. CHAR. The second and third quills are longest, and about
little shorter; the first about equal to the fifth, and about .35 less than
even. The upper parts, with sides of the head and neck, olive-green,
little if any darker. A yellowish white ring round the eye. The sides
the wings like the back, but fainter olive; a tinge of the same across the
chin, throat, and middle of the belly white; the abdomen, lower tail
and sides of the body not covered by the wings, pale greenish yellow.
first primary, secondaries and tertiaries margined with dull yellowish
on the latter. Two transverse bands of pale yellowish (sometimes
tinge) across the wings, formed by the tips of the secondary and
preceded by a brown one. Tail light brown, margined externally by a
mandible light brown above; pale yellow beneath. In autumn the
yellow. Length, 5.65; wings, 3.00; tail, 2.75. *Young* (60892, Mt. C.
1870; B. RIDGWAY): Whole upper surface with indistinct transverse
raceous; wing-markings light ochraceous.

This species is very similar to *E. traillii*, but the
are of a brighter and more uniform olive-green, more like
Vireo olivaceus. The feathers of the crown lack the
There is less of the olivaceous ash across the crown.

ceed the secondaries by nearly an inch, instead of by only about .70; the proportions of the quills are much the same." (*Hist. N. Am. B.*)

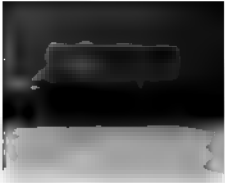
This is probably the most numerous and generally distributed species of the genus in the State. It occurs as a summer resident, in all damp woodlands, but may easily pass unnoticed by the casual observer.

ORDER **MACROCHIRES**.—THE GOATSUCKERS,
MINGBIRDS.

CHARACTERS. Wings much lengthened, with 10 primaries; tail wide and deeply cleft, or else, (i. e., Sub-order *Trochili*), bill long, extensible, and secondaries only six in number.

Following is an analysis of the Families which assigned to this Order. It may be remarked that possess very special characters which in the opinion of ornithologists entitle them to rank as a distinct Order. *Trochilidae* and *Micropodidae* being very much more than either of these groups are to the *Caprimulgidae* that the so-called "Order Macrochires" is a distinct group.

- A.** Secondaries more than 6; bill short, very broad at base, the gape not metallic.
 - a.** Middle toe much longer than lateral toes, its claw with inner edge distinctly bristled; plumage much spotted and otherwise soft, with downy or moth-like surface. (Sub-order *Caprimulgidae*.)
 - b.** Middle toe not distinctly longer than lateral toes, its claw with inner edge; gape without bristles; plumage plain and compact. (Sub-order *Trochilidae*.)
- B.** Secondaries only 6; bill long as head, or longer, slender, the gape not metallic; plumage more or less metallic; size diminutive. (Sub-order *Micropodidae*.)



FAMILY TROCHILIDÆ.—THE HUMMINGBIRDS.

CHAR. Size variable, but usually the smallest of birds. Bill subulate, but very variable as to length; usually longer than the head, and generally straight, but occasionally curved or even (in two genera) recurved. Feet exceedingly small and weak, the tarsus not longer than the middle toe; claws well curved, sharp. Tail of ten feathers, exceedingly variable as to shape. Wing Swift-like, with exceedingly short secondaries and strongly developed primaries; the latter ten; of which the first is longest, except in a single genus (*Aithya*); secondaries six. Plumage, variable, but usually adorned with brilliant metallic tints, especially in the males.

The range of variation in the details of form, size, and other attributes among the four hundred and fifty known species of this remarkable family is something wonderful, and it is therefore difficult to frame a diagnosis which shall express in few words the exclusive characters of the family as a whole. Many species are no larger than a common "Bumble Bee," but the largest is fully equal to our Chimney Swift (*Chetura pelagica*) in size. One species has the bill only a quarter of an inch in length, while in another this member is developed to the enormous length of three and a quarter to four and a quarter inches, or more than the combined length of the head, neck, body, and tail of the bird itself. In the genera *Avocettula* and *Avocettinus* the bill is recurved terminally; but in *Eutoxeres* it has exactly a sickle-shape. The form and relative development of the rectrices vary to such an extraordinary degree that a whole chapter might be devoted to this topic alone; but here it will suffice to refer to this part of the subject briefly: In the genera *Cynanthus* and *Sappho* the lateral rectrices are greatly lengthened, with broad and rounded ends; the rest gradually shorter to the middle pair, which are only one fourth to one fifth of the length of the outer pair. The tail is therefore deeply forficat, and when spread is V-shaped. In the adult males the tail feathers glow with the most brilliantly burnished metallic hues—green blue and violet in *Cynanthus*, fiery red and crimson in *Sappho*—the color varying with the species. In *Steganura* and *Discura* the lateral rectrices are greatly elongated, gradually narrowed toward the end

... (*Ectopistes migratoria*). But the most w
is to be seen in the *Loddigesia mirabilis*, in which
consist of simple bare shafts which extend for so
yond the tips of the coverts, and bear at their
shaped paddle more than an inch in length and
breadth. Other genera have the rectrices needle-sl
etc., while the majority have the tail composed of fe
able for any peculiarity of form.

"The bill of the Hummingbird is awl-shaped c
and sharp-pointed; straight or curved; sometime
head, sometimes much longer. The mandibles ar
tip for the lodgment of the tongue, and form a t
apposition of their cutting edges. There is no i
bristly feathers at the base of the mouth. The
resemblance to that of the Woodpeckers in the e
cornua backwards, so as to pass around the back
then anteriorly to the base of the bill. The tongue
peculiar structure, consisting anteriorly of two hollow
at the ends and united behind. The food of the
consists almost entirely of insects, which are captu
ing the tongue in flowers of various shapes without
very wide." (*Hist. N. Am. B.*)

The Hummingbirds, more than any other family
most remarkable feature of the New World bird-life
absolutely no representatives in any other part of
Swifts being the nearest relatives they have in other c

Hummingbirds abound most in mountainous c
the configuration of the surface and productions
most diversified within small areas. Their centre c
among the northern Andes, between the parallels c
side of the equator, from which region they gra
in numbers both to the northward and southward.
rapidly toward the extensive

mountainous portions of the southwestern United States, including the semi-tropical Rio Grande valley. Small as this number may appear, the southwestern portion of the Union may be considered richly represented when compared with the vast valley of the Mississippi and the Atlantic water-shed—a region of unsurpassed fertility and luxuriant vegetation, yet which throughout its whole extent, even including the peninsula of Florida, possesses only a single species. In this scarcity, compared with the western mountainous regions, of representatives of a numerous family of birds, we see a certain parallelism with the lowlands of eastern South America as compared with the Andean highlands, only, on account of climatic differences, the contrast is more marked.

We have therefore to consider but a single genus or species of Hummingbird in the present work, none of the western species coming sufficiently near to render their occurrence in the least probable.

GENUS *TROCHILUS* LINNÆUS.

Trochilus LINNÆUS, *Systema Natura*, ed. 10, i, 1758, 119. Type (by elimination) *T. colubris* LINN.

GEN. CHAR. Male with the metallic gorget of the throat nearly even all round. Tail forked; the feathers lanceolate, acute, becoming gradually narrower from the central to the exterior. Inner six primaries abruptly and considerably smaller than the outer four, and with the inner web notched at the end.

The female has the outer tail-feathers somewhat lanceolate, as in the male, though much broader. They are broad to the terminal third, where they become rapidly pointed, the tip only somewhat rounded; the sides of this attenuated portion (one or the other, or both) broadly and concavely emarginated, which distinguishes them from the females of *Selasphorus* and *Calypte*, in which the tail-feathers are broadly linear to near the end, which is much rounder and without any distinct concavity.

Trochilus colubris Linn.

RUBY-THROATED HUMMINGBIRD.

Trochilus colubris LINN. S. N. ed. 10, i, 1758, 120.—WILS. *Am. Orn.* ii, 1810, 26, pl. 10, figs. 3, 4.—NUTT. *Man.* i, 1832, 588.—AUD. *Orn. Biog.* i, 1832, 248; v. 1839, 544, pl. 47; *Synop.* 1839, 170; *B. Am.* iv, 1842, 190, pl. 253.—BAIRD, *B. N. Am.* 1858, 131; *Cat. N. Am. B.* 1859, No. 101.—COUES, *Key*, 1872, 184; *Check List*, 1874, No. 275; 2d ed. 1882, No. 410; *B. N. W.* 1874, 271.—B. B. & R. *Hist. N. Am. B.* ii, 1874, 448, pl. 48, fig. 2.—RIDGW. *Nom. N. Am. B.* 1881, No. 335.

BIRDS OF ILLINOIS.

1 North America, north to 57° in the interior. In winter, Cuba, Bahamas, and Central America, south to Veragua; also Bermudae.

Tail in the male deeply forked; the feathers all narrow lanceolate acute, slightly rounded and emarginate; the feathers broader, though pointed distally green above; a ruby-red gorget (blackish near the bill; with no red on the sides of the throat; a white collar on the jugulum; sides of body greenish, tail-feathers bluish violet. *Female*, without the red on the throat, the tail rounded and inner feathers shorter than the outer; the tail-feathers banded with white, tipped with white, no rufous or cinnamon on the tail in either sex. *g*, 1.60; tail, 1.25. *Young* males are like the females; the throat usually suffused with red; the tail is, in shape, more like that of the old male." (*Hist.*

As to the habits of the well-known Hummingbird, its distribution is general over every portion of the State—or every portion of the continent from the Great Plains to the Atlantic coast and from Canada to the Gulf of Mexico. It comes among us when spring has fairly come, and departing with the first autumnal frosts, these little birds traverse their migrations that appears almost impossible to minute, many individuals making their winter homes as far as Veragua, in the State of New Granada, immediately on the Isthmus of Panama.

When the weather warms, the Hummingbird becomes in a short time so tame and confidingly on one's finger and sip syrup (best made of sugar dissolved in warm water) from a saucer, but on account of its delicate organization and susceptibility to cold, attempts



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WASHINGTON, D. C.

FAMILY MICROPODIDÆ.—THE SWIFTS.

"CHAR. Bill very small, without notch, triangular, much broader than high; the culmen one sixth the gape. Anterior toes cleft to the base, each with three joints (in the typical species), and covered with skin or feathers; the middle claw without any serrations; the lateral toes nearly equal to the middle. Bill without bristles, but without minute feathers extending along the under margin of the nostrils. Tail feathers ten. Nostrils elongated, superior and very close together. Plumage compact. Primaries ten, elongated, falcate.

The *Micropodidæ* (formerly *Cypselidæ*), or Swifts, "are Swallow-like birds, generally of rather dull plumage and medium size. They were formerly associated with the true Swallows on account of their small, deeply cleft bill, wide gape, short feet, and long wings, but are very different in all the essentials of structure, belonging, indeed, to a very different order or suborder. The bill is much smaller and shorter; the edges greatly inflected; the nostrils superior, instead of lateral, and without bristles. The wing is more falcate, with ten primaries instead of nine. The tail has ten feathers instead of twelve. The feet are weaker, without distinct scutellæ; the hind toe is more or less versatile, the anterior toes frequently lack the normal number of joints, and there are other features which clearly justify the wide separation here given especially the difference in the vocal organs. Strange as the statement may appear, their nearest relatives are the *Trochilidæ*, or Hummingbirds, notwithstanding the bills of the two are as opposite in shape as can readily be conceived." (*Hist. N. Am. B.*)

The Swifts are as poorly represented in eastern North America as the Hummingbirds, only a single species (the common Chimney Swift, *Chaturæ pelagica*), occurring east of the Rocky Mountains. The family is of cosmopolitan range, species occurring in nearly all parts of the world.

GENUS CHÆTURA STEPHENS.

Chaturæ STEPHENS, Shaw's Gen. Zool., Birds, xiii, 41, 1835, 76. Type *Hirundo pelagica* LINN.

"GEN. CHAR. Tail very short, scarcely more than two fifths the wings; slightly rounded; the shafts stiffened and extending some beyond the feathers in a rigid spine.

This genus has numerous representatives in while in the western United States, especially occurs the *C. vauuxii* (Towns.), a species allied to from the *C. pelagica*.

Chaetura pelagica (Linn.)

CHIMNEY SWIFT.

Popular synonyms. Chimney Swallow; Chimney Sweep.

Hirundo pelagica LINN. S. N. ed. 10, 1, 1758, 192.

Chaetura pelagica B. B. & R. Hist. N. Am. B. II, 1874, 432, pl. 45, fig 1874, 267.

Hirundo pelagica LINN. S. N. ed. 12, 1, 1766, 345.—WILS. Am. Orn. v, 1

Cypselus pelagicus BP. 1828.—NUTT. Man. 1, 1832, 609.—AUD. Orn. 1839, 419, pl. 158.

Chaetura pelagica STEPH. 1825.—AUD. Synop. 1839, 33; B. Am. 1, 1840 B. N. Am. 1855, 144; Cat. N. Am. B. 1859, No. 109.—COUES, Key, 187 1874, No. 271.

Chaetura pelagica RIDGW. Nom. N. Am. B. 1881, No. 351.—COUES, 2 No. 405.

HAB. Eastern United States and British Provinces. *Winter quar*

SP. CHAR. Above dark sooty grayish, paler on rump and upper tail a faint greenish gloss; wings darker than back. Beneath lighter so and throat much paler. Bill black; iris brown; feet livid grayish. Tot extent, 12.30; wing, 5.00-5.20; tail, 1.90-2.15.

This Swift, the only species inhabiting eastern N is abundant throughout the country, and its general well known as to make special mention of them in t superfluous. One interesting fact connected with Swift may however be alluded to, viz., the circum winter home is absolutely unknown to ornithologists. taken at any locality south of the Gulf coast have 1 while no one seems to have ever seen one any United States in winter. It

try to see at evening dense swarms, consisting of thousands of individuals, descending into unused chimneys, to roost during the night. Indeed, so many thus congregate together within a comparatively limited space that they must certainly cling fast to one another like bees when "swarming." The following description of a "swallow tree" in the northern part of the State is clipped from the *Chicago Times*:

"Among the attractions at Grand Lodge is a 'swallow tree,' which stands on the shore directly in front of the Island House. The swallows commence to assemble about 7:30 p. m., forming a circle around the top of the tree until three or four thousand have arrived, and then rapidly disappear beneath the foliage. The tree is a sycamore, is hollow its entire length, and has been inhabited by swallows for nine successive years, the visitors not varying four days in the date of their arrival; viz., from the twenty-fourth to the twenty-ninth of April. They leave their resting place every morning at sunrise, and take their final departure when frost comes."

Before the country became thickly settled, the "Chimney Swallow" nested habitually in hollow trees, especially sycamores, having a large hollow trunk, opening, like a chimney, at the top. The writer has found nests thus situated at Mount Carmel, and at the same place discovered another glued to the inside of an outbuilding built of upright planks.

FAMILY CAPRIMULGIDÆ.—THE GO.

CHAR. Bill very short; the gape enormously long and wide behind the eyes. Culmen variable. Toes connected at base by a series lengthened; plumage soft, sometimes very full and loose, a

The above brief diagnosis is sufficient to distinguish from all others in North America, especially with connection with that given on page 358.

The North America genera are distinguished by the following characters:

- A. Gape with conspicuous bristles; tail even or rounded.
 - a. Tarsus feathered in front almost to the toes, and shorter than the first quill longer than the fourth.
 - 1. *Antrostomus*. Tail rounded, shorter than the wing.
 - b. Tarsus entirely naked in front, and longer than the middle toe than the fourth.
 - 2. *Phalacroptilus*. Tail even and much shorter than the wing; peculiarly soft, velvety surface. Sexes with the tail not differently marked.
 - 3. *Nyctidromus*. Tail rounded, long as the wing. Sexes with the tail differently marked.
- B. Gape without conspicuous bristles; tail emarginated or slightly notched.
 - 4. *Chordeiles*.

GENUS ANTROSTOMUS GOULD.

Antrostomus GOULD, Icones Avium, 1838. Type, *Caprimulgus vociferans*.

GEN. CHAR. Bill very small, with tubular nostrils, and the gape with long, pointed bristles projecting beyond the end of the bill. Tarsus with the middle toe, chiefly feathered. Tail broad, rounded; wings broad and shorter than third, but longer than the fourth; plumage soft and lax.

The two North American species, both of which may be distinguished as follows:

- A. *Ripidura* ...

***Antrostomus carolinensis* (Gmel.)****CHUCK-WILL'S-WIDOW.**

Popular synonym. Dutch Whip-poor-will.

Caprimulgus carolinensis GMEL. S. N. 1, 1788, 1028.—WILS. Am. Orn. iv, 1811, 95, pl. 54, fig. 2.—NUTT. Man. 1, 1832, 612.—AUD. Orn. Biog. i, 1832, 273; v, 1839, 401, pl. 52; Synop. 1839, 31; B. Am. 1, 151, pl. 41.

Antrostomus carolinensis GOULD, Icones Avium.—BAIRD, B. N. Am. 1858, 147; Cat. N. Am. B. 1859, No. 1838.—COUES, Key, 1872, 180; Check List, 1874, No. 264; 2d ed. 1882, No. 396; B. N. W. 1874, 263.—B. B. & R. Hist. N. Am. B. II, 1874, 410, pl. 46, fig. 1.—RIDGW. Nom. N. Am. B. 1881, No. 353.

HAB. South Atlantic and Gulf States, and lower Mississippi Valley, north to southern Illinois and Indiana; in winter, eastern Mexico and south to Costa Rica; Cuba?

SP. CHAR. Bristles of gape with lateral filaments. Above, finely mottled gray, ochraceous, tawny, and black; the pileum with broad irregular streaks of black, the scapulars with irregular blotches of the same; primaries dusky, spotted with ochraceous rufous. Lower parts mixed tawny ochraceous and grayish, vermiculated and transversely barred with dusky; the gular region and crissum with ochraceous prevailing. *Male.* Inner webs of three outer tail-feathers with terminal third, or more, white (ochraceous on lower surface). *Female.* Inner webs of outer rectrices without white. Wing, 8.70-8.90; tail, 6.26-6.30.

The Chuck-will's-widow is essentially a southern bird, the extreme northern limit of its range being the lower Wabash valley, where, as far north as Mount Carmel it is, or at least was, not uncommon. The writer has heard its easily recognized notes as far north as the then (in 1865) heavily timbered Big Creek bottoms in Richland County, about three miles south of the town of Olney. Its habits are essentially the same as those of the Whip-poor-will, and its notes are somewhat similar, but louder, and easily distinguished after once being heard.

Antrostomus vociferus* (Wils.)*WHIP-POOR-WILL.**

Caprimulgus vociferus WILS. Am. Orn. v, 1812, 71, pl. 41, figs. 1, 2, 3.—NUTT. Man. 1, 1832, 614.—AUD. Orn. Biog. i, 1832, 443; v, 1839, 405, pl. 52; Synop. 1839, 32; B. Am. 1, 1840, 155, pl. 42.—RIDGW. Nom. N. Am. B. 1881, No. 354.

Antrostomus vociferus BP. 1838.—BAIRD, B. N. Am. 1858, 148; Cat. N. Am. B. 1859, No. 112.—COUES, Key, 1872, 180; Check List, 1874, No. 266; 2d ed. 1882, No. 397; B. N. W. 1874, 260.—B. B. & R. Hist. N. Am. B. II, 1874, 413, pl. 46, fig. 2.

HAB. Eastern United States and British Provinces, north to about 50° in the interior; winters in Gulf States, and south through eastern Mexico to Guatemala. (Replaced in Arizona and table-lands of Mexico by *A. vociferus arizonæ* Brewster.)

SP. CHAR. Bristles of gape without lateral filaments. Above finely mottled gray, brown and tawny, the gray prevailing on the pileum, which has a median series of black longitudinal blotches, with narrower streaks on each side. Scapulars blotched with black;

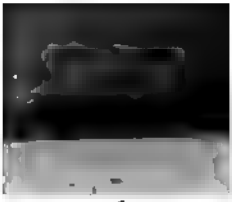
Although so well known by its familiar nocturnal poor-will is a bird that comparatively few people is accounted for by its strictly nocturnal habits. Brewer (*Hist. N. Am. B.* Vol. II., p. 415), "is noise degree," and is by no means protracted. "They are shy, and are easily startled if approached. At night twilight disappears, these birds issue from their retreats into more open spaces in quest of their favorite food, the nocturnal insects, moths, beetles, and others, and dwellings by lights, the Whip-poor-will is frequently in pursuit, into the same vicinity. For several successive nights birds have appeared nearly every evening within a few feet of the house. They never suffer from approach, but fly as soon as they notice any movement. The flight of insects is somewhat different from that of preceding species, their flights being usually quite more perceptible sailing, and more in the manner of Flycatchers. The song is given out at intervals throughout the night and dawn.

"The nocturnal habits of this bird have prevented accurate knowledge of its true character. Strange as it may seem, in many parts of the country the Night-Hawk and the Whip-poor-will are supposed to be one and the same bird, even by those ill-informed in other respects."

GENUS **CHORDEILES** SWAINSON.

Chordeiles SWAINSON, *Fauna Bor.-Amer.* II, 1831, 337. Type, *Caprimulgus* GMEL.

. GEN. CHAR. Bill small, the nostrils depressed; the gape with few bristles. Wings long, narrow, and pointed, the first quill nearly equal to the second. Tail rather narrow, slightly forked; plumage quite compact and crepuscular.



2. *C. texensis*. Outer webs of primaries more or less spotted with rufous or ochraceous; white patch on primaries extending over only four quills, and posterior to their middle portion.

Chordeiles virginianus (Gmel.)

NIGHTHAWK.

Popular Synonyms. Whip-poor-will; Bull Bat; Will-o'-the-wisp (Connecticut).

Caprimulgus virginianus GM. S. N. 1, 1798, 1028 (part only).—NUTT. Man. 1, 1832, 619; II, 134, 609.—AUD. Orn. Biog. II, 1834, 273; v. 1839, 406, pl. 147.

Caprimulgus (Chordeiles) virginianus SW. & RICH. F. B.-A. II, 1831, 337.

Chordeiles virginianus BP. 1839.—AUD. Synop. 1839, 32; B. Am. 1, 1840, 259, pl. 43.—COUES, Key, 1872, 351; Check List, 1874, No. 287; 2d ed. 1882, No. 399; B. N. W. 1874, 263.

Caprimulgus popetue VIEILL. Q. A. S. 1, 1807, 56, pl. 24 (female).

Chordeiles popetue BAIRD, B. N. Am. 1858, 151; Cat. N. Am. B. 1859, No. 114.—B. B. & R. Hist. N. Am. B. II, 1874, 491.—RIDGW. Nom. N. Am. B. 1881, No. 337.

Caprimulgus americanus WILS. Am. Orn. v. 1812, 65, pl. 46, figs. 1 & 2.

HAB. Eastern North America, north to Hudson's Bay; in winter, Bahamas, Cuba, Jamaica, and eastern tropical America to Brazil.

SP. CHAR. Male. Above greenish black, with but little mottling on the head and back. Wing-coverts varied with grayish; scapulars with yellowish rufous. A nuchal band of fine gray mottling behind which is another coarser one of rufous spots. A white V-shaped mark on the throat; behind this a collar of pale rufous blotches, and another on the breast of grayish mottling. Under parts banded transversely with dull yellowish or reddish white and brown. Wing quills quite uniformly brown. The five outer primaries with a white blotch (about half an inch long) midway between the tip and carpal joint, not extending on the outer web of the outer quill. Tail with a terminal white patch which does not reach the outer edge of the feathers. *Female* without the caudal white patch, the white tail-bands more mottled, the white of the throat mixed with reddish. Length of male, 9.50; wing, 8.20. (*Hist. N. Am. B.*)

First plumage. Above dull black, irregularly marbled everywhere with reddish fawn-color and pale rusty. All the feathers are tipped, edged, and barred with the lighter colors, the back appearing for the most part in subterminal spots or blotches. The primaries (which are but just sprouting) are black, broadly tipped with pale rusty. Under parts clothed thickly with fluffy, whitish down, beneath which on the breast and sides, true feathers of a dull white barred with dark brown are beginning to appear. (From a specimen in the cabinet of Mr. N. C. Brown, taken at Deering, Me., June 23, 1875.) It seems probable that young of this species—and perhaps of the whole family, like those of the *Tetraonidae* and some others—pass through a state of plumage previous to the usual primal one. The specimen above described is, strictly speaking, in process of transition between the two, and still retains patches of the soft whitish down which must have constituted its entire covering at an earlier period." (BREWSTER, Bull. Nutt. Orn. Club, 1876, p. 178.)

Popularly confounded with the Whip-poor-will, the Nighthawk is a bird of very different appearance and quite distinct habits. Instead of being strictly nocturnal it is hardly crepuscular, but may often be seen flying about in broad daylight, though toward evening is their favorite time of activity. Says Dr. Brewer:

"Ordinarily laying its eggs upon the bare ground, usually in some open situation, the Night Hawk has become accustomed to nest on

Chordeiles virginianus hei

WESTERN NIGHTEWALK.

Chordeiles henryi Cass. Illustr. B. Cal. Tex. &c. 1855, 922; ed. 1860 17; Cat. N. Am. B. 1859, No. 115.

Chordeiles popetue var. *henryi* ALLEN.—B. B. & R. H. fig. 4.

Chordeiles popetue henryi RIDGW. Nom. N. Am. B. 1881, No. 400.

Chordeiles virginianus var. *henryi* COUES, Key, 1872, 18

HAB. Western United States (except Pacific coast north

SUBSP. CHAR. Similar to true *C. virginianus*, but much much buffy mottling.

This form, which is of occasional occurrence habits and notes a counterpart of the ordinary desert regions of the Great Basin the writer found a mon summer resident.

ORDER PICI.—THE WOODPECKERS, ETC.

CHARACTERS. Bill straight, pointed or chisel-shaped at tip; tongue barbed at point and extensile; feet zygodactyle; tail-feathers 12, but outer pair rudimentary and concealed.

FAMILY PICIDÆ.—THE WOODPECKERS.

"CHAR. Outer toe turned backwards permanently, not versatila laterally, the basal portion of the tongue capable of great protrusion.

"The preceding characters combined appear to express the essential character of the *Picidæ*. In addition, it may be stated that the tongue itself is quite small, flat, and short, acute and horny, usually armed along the edges with decurved hooks. The horns of the hyoid apparatus are generally very long, and curve round the back of the skull frequently to the base of the bill, playing in a sheath, when the tongue is thrown forward out of the mouth to transfix an insect.

"There are twelve tail-feathers, of which the outer is, however, very small and rudimentary (lying concealed between the outer and adjacent feathers), so that only ten are usually counted. The tail is nearly even, or cuneate, never forked, the shafts very rigid in the true Woodpeckers; soft in *Picumninae* and *Jynginae*. The outer primary is generally very short, or spurious, but not wanting. The bill is chisel- or wedge-shaped, with sharp angles and ridges and straight culmen; sometimes the culmen is a little curved, in which case it is smoother, and without ridges. The tarsi in the North American forms are covered with large plates anteriorly, posteriorly with small ones, usually more or less polygonal. The claws are compressed, much curved, very strong and acute.

"The *Picidæ* are found all over the world with the exception of Madagascar, Australia, the Moluccas, and Polynesia. America is well provided with them, more than half of the described species belonging to the New World.

"The subfamilies of the *Picidæ* may be most easily distinguished as follows, although other characters could readily be given:

Picinae. Tail-feathers pointed, and lanceolate at end; the shafts very rigid, thickened, and elastic.

Picumninae. Tail soft and short, about half the length of wing; the feathers without stiffened shafts, rather narrow, linear, and rounded at end.

Jynginae. Tail soft and rather long, about three fourths the length of wing; the feathers broad, and obtusely rounded at end.

BIRDS OF ILLINOIS.

subfamilies the *Picinae* alone occur north to Mexico. *æ*, to which the well-known Wryneck of England (*Jynx*) belongs, are exclusively Old World; the *Picumninae* belong to the tropical regions of America, although a few species occur in Africa and India." (*Hist. N. Am. B.*)

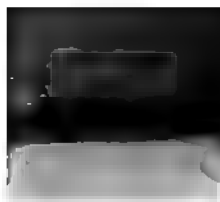
In American *Picinae* may for convenience of identification be divided into the following groups:—

æ. Bill variable in length; the outline above and below nearly straight, the ends truncated; a prominent ridge on the side of the mandible from the middle of the base, or a little below, and running out to the commissure, or extending parallel to and a little above it, to the tip; sometimes obliterated or confluent with the lateral bevel of the bill; the bill considerably overhung by the lateral ridge more or less concealed by thick bushy tufts of feathers at the base of the bill. Anterior toe generally longer than the posterior.

pic. Bill rather long, the outline, that of the culmen especially, curved. The lateral ridge much nearest the culmen and, though not at the base, disappearing before coming to the lower edge of the bill; not overhanging the nostrils, which are broadly oval, anteriorly, and not concealed by the bristly feathers at the base of the bill. Toes nearly equal; the anterior rather longer.

n. Bill rather long, much depressed, and the upper outline much the acutely pointed (not truncate) tip. The commissure concave. Bill without any ridges. The nostrils broadly oval and naked. Anterior outer toe longest.

These three diagnoses will serve to distinguish the three groups for our present purposes; the bill being strongest in the



The eggs of all are lustrous polished white, without any markings, and laid in holes in trees, upon a bed of chips, no material being carried in for the construction of the nest.

According to Mr. Brewster (Bull. Nutt. Orn. Club, October, 1878, p. 179, foot-note), "the young of most, if not all, of the Woodpeckers, regularly moult the wing- and tail-feathers with the rest of the first plumage. No exceptions to this rule occur among large series of the common North American species examined, and it may probably be found to hold good among all, excepting, perhaps, some highly specialized groups. Another peculiar feature in the early development of the species most thoroughly investigated, and one which is perhaps common to all the members of this family, is the fact that a certain portion of the females in first plumage possess to a greater or less degree the adornments which in more advanced stages are peculiar to the males alone, and which are lost with the first moult. Marked examples of this are afforded by young females of *Colaptes auratus*, *Picus pubescens*, and others of which detailed descriptions are given in the text."

The genera with which we have to deal in this work may be distinguished as follows:

Section *Dryobateæ*.

- A. Posterior outer toe longer than the anterior one. (Fourth toe longer than third.)
- a. Lateral ridge starting above the middle of the base of the bill, and extending to the tip.
 1. *Campophylus*. Lateral ridge above the middle of the lateral profile of the bill when opposite the end of the nostrils, which are ovate, and rounded anteriorly. Bill much depressed, very long, gonyas very long. Posterior outer toe considerably longer than the anterior. Primaries long, attenuated towards the tip. Spurious quill nearly half the second. Shafts of four middle tail-feathers remarkably stout, of equal size, and abruptly very much larger than the others; two middle tail-feathers narrower towards base than towards end.* A pointed occipital crest.
 2. *Dryobates*. Lateral ridge in the middle of the lateral profile opposite the end of nostrils, which are ovate and sharp-pointed anteriorly. Bill moderate, nearly as broad as high. Outer hind toe moderately longer than the outer fore toe. Primaries broad to the tip, and rounded. Spurious primary not one third the second quill.
 3. *Picoides*. Lateral ridge below the middle of the profile, opposite the end of the ovate acute nostrils, which it greatly overhangs. Bill greatly depressed; lower mandible deeper than the upper. Inner hind toe wanting, leaving only three toes. Tufts of nasal bristles very full and long.
 - b. Lateral ridge starting below the middle of the base of the bill, and running as a distinct ridge into the edge of the commissure at about its middle; the terminal half of the mandible rounded on the sides, although the truncate tip is distinctly beveled laterally.
 4. *Sphyrapicus*. Nostrils considerably overhung by the lateral ridge, very small, linear. Gonyas as long as the culmen from the nostrils. Tips of tail-feathers elongated and linear, not cuneate. Wings very long; exposed portion of spurious primary about one fourth that of second quill.

*A character common to all the members of the genus, and distinguishing them from the species of every other; this peculiar form of the middle tail-feathers is caused principally by a folding of the webs downward, almost against each other. The under surface of the shafts have a very deep groove their whole length, which is seen in no other genus.

as in *Sphyrapicus*. A pointed occipital crest, as in

Section *Melanerpeæ*.

6. *Melanerpes*.

Back and wings banded transversely with black less red; rest of head with under parts grayish, and the middle of the abdomen. Rump white. (Subgenus)

Upper parts uniform black, without bands, with variable beneath, but without transverse bands. (Subgenus)

Section *Colaptes*.

7. *Colaptes*. Above brown, barred with black; a white posterior to black crescent on chest, vinaceous white below spotted with black; shafts of quills and tail-feathers

GENUS *CAMPEPHILUS* GRAY

Campephilus GRAY, List of Genera, 1840, 54. Type, *Picus* *pubescens*

"GEN. CHAR. Bill considerably longer than the head, much more than high at the base, becoming somewhat compressed near the tip. Culmen very slightly curved, gonys scarcely appreciable; commissure straight. Culmen with a parallel ridge a little above the centre of the basal outline of the bill, the ridge running upwards, and a slight concavity between it and the anterior ridge. Gonys considerably more than half the commissure. Nostrils near the base of the bill; concealed by the bristly feathers. Nostril feathers are seen at the sides of the lower jaw and on the chin.

"Feet large; outer hind toe much longest; claw of inner fore toe longer than outer fore claw; inner hind toe scarcely more than half the outer hind toe. Tarsus rather shorter than the inner fore toe. Tail long, central feathers abruptly much larger than the others, and with the outer feathers continuously along their under surface; webs of the two middle feathers almost against each other, so that the feathers appear narrowly. Wings long and pointed, the third, fourth, and fifth quills nearly longest, leaving six 'tertials,' instead of three or four as in *Picus*. Color continuous black, relieved by white patches. Irides black. Occipital crest." (*Hist. N. Am. B.*)

This genus embraces the largest of known species is *C. imperialis* GOULD, of western North America. It considerably exceeds our Ivory-billed Woodpecker in size, having the bill three and a half inches longer (to the forehead) and the wing more than three feet.

Campephilus principalis GRAY, 1840.—BAIRD, B. N. Am. 1858, 83; Cat. N. Am. B. 1859, No. 72.—COUES, Key, 1872, 192; Check List, 1874, No. 293; 2d ed. 1882, No. 431.—B. B. & R. Hist. N. Am. B. II, 1874, 496, pl. 49, figs. 1, 2.—RIDGW. Nom. N. Am. B. 1881, No. 359.

HAB. South Atlantic and Gulf States and lower Mississippi Valley, north to North Carolina, southern Illinois, and southeastern Missouri, west to eastern Texas. (According to AUDUBON, formerly occurred accidentally as far north as Maryland, and regularly in Kentucky, southern Indiana and up the Mississippi to the mouth of the Missouri.)

SP. CHAR. Fourth and fifth quills equal; third a little shorter. Bill horn-white. Body entirely of a glossy blue-black (glossed with green below); a white stripe beginning half an inch posterior to the commissure, and passing down the sides of the neck, and extending down each side of the back. Under wing-coverts, and the entire exposed portion of the secondary quills, with ends of the inner primaries, bristles, and a short stripe at the base of the bill, white. Crest scarlet, upper surface black. Length, 21.00; wing, 10.00. *Female* similar, without any red on the head, and with two spots of white on the end of the outer tail-feather.

"In the male the entire crown (with its elongated feathers) is black. The scarlet commences just above the middle of the eye, and, passing backwards a short distance, widens behind and bends down as far as the level of the under edge of the lower jaw. The feathers which spring from the back of the head are much elongated above; considerably longer than those of the crown. In the specimens before us the black feathers of the crest do not reach as far back as the scarlet." (*Hist. N. Am. B.*)

There are no recent records of the occurrence of the Ivory-billed Woodpecker in Illinois. There can be little doubt, however, that it is still to be found in the heavily timbered counties of the extreme southern portion of the State. Audubon states that in descending the Ohio river he met with it near the confluence of that stream with the Mississippi, and that he observed it along the latter as far up as the mouth of the Missouri. The writer has a distinct recollection of what he believes to have been this species in White county, some forty miles south of Mount Carmel, but never observed it in the vicinity of the latter place.

The flight of this magnificent Woodpecker is said to be totally different from that of the Pileated, and on this account, when on the wing it may readily be distinguished from that species. Its manner of flight is similar to that of the Hairy Woodpecker, or by deep undulations, while that of the Pileated is an unsteady somewhat laborious flapping in a straight horizontal line. "The transit from tree to tree," as Audubon observes, "is performed by a single sweep, as if the bird had been swung in a curved line from one to the other." Its notes are also very different, sounding like *pait*,

BIRDS OF ILLINOIS.

uttered in "a clear, loud, and rather plaintive tone," sometimes to the distance of half a mile, and resembling the note of a clarionet."

GENUS DRYOBATES BOIE.

GEN. S. N. ed. 10, 1, 1738, 112; ed. 12, 1, 1793, 173, and of most authors.
 KOCH, Syst. Natur. Zool. 1, 1816, 74. Type, by elimination, *Picus major*.
 VIEILL. Analyse 1816, p. 45.
 LIE, Isis, 1836, 977. Type, *Picus pubescens* LINN.

Bill equal to the head, or a little longer; the lateral ridges conspicuous, the middle of the base of the bill, the basal elongated over nostrils nearest the ridges of the culmen and gonysomite and very nearly straight or towards the tip; the bill but little broader than high at the base, becoming considerably before the middle. Feet much as in *Campophidax*; the toe longest; the outer anterior about intermediate between it and the inner posterior reaching to the base of the claw of the inner anterior equal to the inner anterior toe, shorter than the two other long toes. Wings reaching to the middle of the tail, rather rounded, the fourth and fifth quills (the rather broad and rounded " (Hist. N. Am. B.)

as found in eastern North America may be distinguished

ordinally striped with white

ca. Outer tail-feathers without black bars. Wing, 4.25 or more

cons. Outer tail-feathers barred with black. Wing less than 4.25
 versely barred with white.

lis. Auriculars entirely white: sides marked with black. > 2 1/2 in. 2 1/2 in.



stripes on each side of the head; the upper scarcely confluent behind, the lower not at all so; two black stripes confluent with the black of the nape. Beneath white. Three outer tail-feathers with the exposed portions white. Length, 8.00-11.00; wing, 4.00-5.00; bill, 1.00-1.25. *Male*, with a nuchal scarlet crescent (wanting in the female) covering the white, generally continuous, but often interrupted in the middle. Immature birds of either sex with more or less of the whole crown spotted with red or yellow, or both, sometimes the red almost continuous.

Specimens from Mount Carmel measure, before skinning, as follows:

Adult males. Total length, 8.75-9.00; extent, 14.75-15.25.

Adult females. Total length, 8.50-9.00; extent, 14.00-15.00.

Bill varying from slate-color to bluish horn-color; iris brown, varying to claret-purple; feet ashy blue, olive-gray or slate-color.

This common and well-known species is a permanent resident throughout the State. It is most numerous, however, in winter though by no means rare, as a rule, during summer. It possesses no characteristics worthy of special mention here.

The large northern form, *D. villosus leucomelas*, may occur as a winter visitant to the extreme northern portion of the State.

In an article condemning the Yellow-bellied Woodpecker (*Sphyrapicus varius*) as a scourge to fruit and shade trees, published in the *Prairie Farmer* for Jan.—, 1862, Dr. P. R. Hoy, of Racine, Wisconsin, has the following good words to say for the present species:

"This species is not migratory but remains the entire year with us. Cheerful and industrious, he is always on the lookout for those worms that burrow in the substance of the wood, or under the bark of trees—the larva of the Capricorn Beetles, the Buprestidæ, etc. He is an expert at auscultation and percussion, and he is not indebted to Laennec for the art either. As he explores suspicious localities with gentle taps, he quickly detects the evidences of unsoundness, and is not slow to learn the cause. *Worms* is his hobby—soon he chips an opening, and with his long, slender tongue, armed with a barbed lance point, a capital tool, he soon extracts the cause of the evil. While engaged "worming," he continues to utter his cheerful *Plick, Plick*, in a major key, as if conscious that he is engaged in a good cause, and not ashamed to own it. You can always tell where he is. A few ears of corn is about all the pay he takes for his valuable work. Protect him, he is our friend. May that gun ever hang fire that is directed against the Hairy Woodpecker."

ANN. S. N. ed. 12, i, 1766, 175.—WILS. AM
 NUTT. Man. i, 1832, 576.—AUD. Orn. Biog. ii, 1834, 81; v,
 180; B. Am. iv, 249, pl. 263.—BAIRD. B. N. Am. 1858, 89;
 COUES, Key, 1872, 194; Check List, 1874, No. 299; 2d ed.
 282 (a. *pubescens*).—B. B. & R. Hist. N. Am. B. ii, 1874,
 Nom. N. Am. B. 1881, No. 361.

Picus (Dendrocopus) pubescens Sw. F. B.-A. ii, 1831, 307.
Picus (Dendrocopus) medianus Sw. F. B.-A. ii, 1831, 308 (New
Picus medianus NUTT. Man. ii, 1834, 601.
Picus (Dendrocopus) meridionalis Sw. F. B.-A. ii, 1831, 308 (C

HAB. Eastern and northern North America, resident throu-
 ka, including nearly the whole of that country, or from the
 (Replaced in the western United States and British Columbia by

"SP. CHAR. A miniature of *P. villosus*. Above black, with
 back. Two white stripes on the side of the head; the lower
 separated behind, the upper sometimes confluent on the nape.
 the side of the head, the lower not running into the forehead.
 middle and greater coverts and all the quills with white spots,
 two series each; tertiaries or inner secondaries all banded with
 feathers white, with two bands of black at end; third white at tip;
 sometimes spotted with black. Length about 6.25; wing, 3.75.
 ing the white feathers on the nape. Young with whole top of
 Am. B.)

This, the smallest of our woodpeckers, is almost
 ture of *D. villosus*, and is of very similar habits.
 numerous, however, especially in summer.

GENUS **PICOIDES** LACEPEDE.

Picoides LACEP. Mem. Inst. 1801, 509. Type *Picus tridactylus*.

"GEN. CHAR. Bill about as long as the head, very much depre-
 outlines nearly straight, the lateral ridge at its base much nearer
 the culmen, so as to bring the large, rather linear nostrils close to
 missure. The gonyes very long, equal to the distance from the no-
 bill. Feet with only three toes, the first or inner hinder one be-
 lateral a little longer than the inner, but slightly exceeded by
 about equal to the tarsus. Wings very long, reaching beyond the
 tip of the first quill between those of sixth and seventh. Color bla-
 patch of yellow on the crown"; white beneath, transversely banded
 but not wing-coverts, with round spots. Lateral tail-feathers wh-
 exposed portion, except in European species.

"The peculiarities of this genus

COMMON CHARACTERS. The American species of *Picoides* agree in being black above and white beneath; the crown with a yellow patch in the male; a white stripe behind the eye and another from the loreal region beneath the eye; the quills (but not the coverts) spotted with white; the sides banded transversely with black. Four middle tail-feathers wholly black.

1. *P. arcticus*. Dorsal region without white markings; no supraloral white stripe or streak, nor nuchal band of white. Sides of the breast continuously black. *Male*. Crown with a patch of yellow, varying from lemon, though gamboge, to orange, and not surrounded by any whitish markings or suffusion. *Female*. Crown lustrous black, without any yellow, and destitute of white streaks or other markings. Wing, 4.85-5.25; tail, 3.60-3.85; culmen, 1.40-1.55.
2. *P. americanus*. Back barred or otherwise varied with white; a white supraloral streak and nuchal band. *Male*. Crown with a patch of yellow, surrounded or margined with more or less of a whitish suffusion. *Female*. Crown streaked, speckled, or suffused with whitish. Wing, 4.40-5.10; tail, 3.40-3.70; culmen, 1.10-1.25.

Picoides arcticus (Swains.)

ARCTIC THREE-TOED WOODPECKERS.

Popular synonym. Black-backed Three-toed Woodpecker.

Picus tridactylus "LINN." AUD. Orn. Blog. ii, 1834, 198; v, 1839, 538, pl. 132.—NUTT. Man. i, 1832, 578. (Not of LINN.)

Picus (Apternus) arcticus SW. F. B.-A. ii, 1831, 313, pl. 57.

Picus arcticus AUD. Synop. 1839, 182; B. Am. iv, 1842, 266, pl. 268.—NUTT. Man. 2d ed. i, 1840, 691.

Picoides arcticus GRAY, 1845.—BAIRD, B. N. Am. 1858, 98; Cat. N. Am. B. 1859, No. 82. —COUES, Key, 1872, 194; Check List, 1874, No. 300; 2d ed. 1882, No. 443; B. N. W. 1874, 284.—B. B. & R. Hist. N. Am. B. ii, 1874, 530, pl. 50, fig. 1.—RIDGW. Nom. N. Am. B. 1881, No. 367.

HAB. Northern North America, south, in winter, to northern border of United States (Massachusetts, Pennsylvania, northern Illinois, etc.); in the West, breeding south (to 40° at least) in higher mountain ranges.

"SP. CHAR. Above entirely uniform glossy bluish black; a square patch on the middle of the crown saffron-yellow, and a few white spots on the outer edges of both webs of the primary and secondary quills. Beneath white, on the sides of the whole body, axillars, and inner wing-coverts banded transversely with black. Crissum white, with a few spots anteriorly. A narrow concealed white line from the eye a short distance backwards, and a white stripe from the extreme forehead (meeting anteriorly) under the eye, and down the sides of the neck, bordered below by a narrow stripe of black. Bristly feathers of the base of the bill brown; sometimes a few gray feathers intermixed. Exposed portion of two outer tail-feathers (first and second) white; the third obliquely white at end, tipped with black. Sometimes these feathers with a narrow black tip." (*Hist. N. Am. B.*)

This species differs from the other American three-toed Woodpeckers chiefly in having the back entirely black. The white line from the eye is usually almost imperceptible, if not wanting entirely. Specimens vary but little; one from Slave Lake has a longer bill than usual, and the top of head more orange. The size of the crown patch varies; sometimes the frontal whitish is inappreciable. None of the females before me have any white spots in the black of head, as is always the case with those of *P. americanus*.

common species in northern Wisconsin, "and be-
the lake were destroyed, was probably a regula-

GENUS **SPHYRAPICUS** BAIRD

Sphyrapicus BAIRD, Birds N. Am. 1858, 101. Type, *Picus variu*

"GEN. CHAR. Bill as in *Picus*, but the lateral ridge, which i-
ning out distinctly to the commissure at about the middle, be-
rounded without any angles at all. The culmen and gonyes are v-
slightly convex, the bill tapering rapidly to a point; the lateral c-
near the slightly beveled tip. Outer pair of toes longest; the
longest; the inner posterior toe very short, less than the inner an-
Wings long and pointed; the third, excluding the spurious, longe-
broad, abruptly acuminate, with a very long linear tip. Tongue
(*Hist. N. Am. B.*)

This is a very strongly marked genus, of whi-
species occurs east of the Rocky Mountains. In th-
occur three others, one of which (*S. thyroideus*) is i-
beautiful of North American Woodpeckers, while it
markable on account of the great difference in co-
sexes—a difference probably wholly exceptional in t

Sphyrapicus varius (Linn.)

YELLOW-BELLIED SAPSUCKER

Popular synonyms. Red-throated Sapsucker; Squealing or Whini-

Picus varius LINN. S. N. ed. 12, 1, 1766, 176.—WILS. Am. Orn. 1, 1808, 1
Man. 1, 1832, 574.—AUD. Orn. Biog. 11, 1834, 519; v, 1839, 537, pl. 19
Am. iv, 1842, 263, pl. 267.

Sphyrapicus varius BAIRD, B. N. Am. 1858, 103; Cat. N. Am. B.
Key, 1872, 195; Check List, 1874, No. 302; 2d ed. 1882, No. 446; B. N. V
—B. B. & R. Hist. N. Am. B. 11, 1874, 539, pl. 51, figs. 1, 2.—RIDGW.
No. 369.

HAB. Eastern North America, north to at least
northern United States

"**SP. CHAR.** Third quill longest; second a little shorter; first between fourth and fifth, considerably shorter. General color above black, much variegated with white. Feathers of the back and rump brownish white, spotted with black. Crown crimson, bordered by black on the side of the head and nape. A streak from above the eye, and a broad stripe from the bristles of the bill, passing below the eye, and into the yellowish of the belly, enclosing a black postocular one, and a stripe along the edges of the wing-coverts, white. A triangular broad patch of scarlet on the chin and throat, bordered on each side by black stripes from the lower mandible, which meet behind and extend into a large quadrate spot on the breast. Rest of under parts yellowish white, or yellow, streaked and banded on the sides with black. Inner web of inner tail-feather white, spotted with black. Outer feathers black, edged and spotted with white. Quills spotted with white. Length, 8.25; wing, about 4.75; tail, 3.30. *Female* with the red of the throat replaced by white. Immature bird without black on the breast, or red on top of the head, as in every intermediate stage to the perfect plumage." (*Hist. N. Am. B.*)

This bird, the true "Sapsucker," is a winter resident in most portions of Illinois, and though it may perhaps breed sparingly in the extreme northern portion, I can find no record of its doing so.

GENUS *CEOPHELÆUS* CABANIS.

Hylatomus BAIRD, Birds N. Am. 1853, 107. Type *Picus pilatus* LINN. (*Nec Hylotoma* LATREILLE, 1804.

Ceophileus CABANIS, Jour. für Orn. 1862, 176. Same type.

"**GEN. CHAR.** Bill a little longer than the head; considerably depressed, or broader than high at the base; shaped much as in *Campephilus*, except shorter, and without the bristly feathers directed forwards at the base of the lower jaw. Gonys about half the length of the commissure. Tarsus shorter than any toe, except the inner posterior. Outer posterior toe shorter than the outer anterior, and a little longer than the inner anterior. Inner posterior very short, not half the outer anterior; about half the inner anterior one. Tail long, graduated; the long feathers much incurved at the tip. Wing longer than the tail, reaching to the middle of the exposed surface of tail; considerably graduated, though pointed; the fourth and fifth quills longest. Color uniform black. Head with pointed occipital crest. A stripe from nasal tufts beneath the eye and down side of neck, throat, lining of wing, and basal portion of under surface of quills, white; some species with the abdomen and sides barred black and brownish white; others with a white scapular stripe in addition. Male with whole crown and crest and maxillary patch red; female with only the crest red." (*Hist. N. Am. B.*)

This genus is similar in general appearance and size to *Campephilus*, but differs essentially in many respects; the differences being, however, mostly those which distinguish all other Woodpeckers from the species of *Campephilus*, which is unique in the peculiar structure of the tail-feathers and in other characters, as detailed under the head of that genus on page 374.

The single species belonging to North America has numerous representatives within the tropics.

Hylaomus pileatus BAIRD, B. N. Am. 1858, 107; Cat. N. A. Key, 1872, 192; Check List, 1874, No. 294; 2d ed. 1882, No. 43 & R. Hist. N. Am. B. ii, 1874, 550, pl. 56, figs. 5, 6.—RIDGW. N. *Ceophlæus pileatus* CABANIS, Jour. für Orn. 1862, 176.

HAB. Whole of heavily timbered portions of North America New Mexico, and California; north to Nelson river and Fort L latitude 62° and 63°, in the interior.

"SP. CHAR. Fourth and fifth quills equal and longest; third sixth and seventh. Bill blue-black; more horn-color beneath. wings, and tail dull greenish black. A narrow white streak from the occiput; a wider one from the nostril feathers (inclusive), up the side of the head and neck; sides of the breast (concealed by and under wing-coverts, and concealed bases of all the quills, with head, white, tinged with sulphur-yellow. Entire crown from a well-developed occipital crest, as also a patch on the ramus of the A few faint white crescents on the sides of the body and on the scapulars generally tipped with white. Length, about 18.00; wing the red on the cheek, and the anterior half of that on the top of black." (*Hist. N. Am. B.*)

This noble bird, inferior only to the magnificent *philus principalis*) among North American woodpeckers in wooded districts throughout the State, being still more heavily timbered portions. It is very active therefore as well as on account of its large size and is a conspicuous bird. Its blows upon dead trees those of a woodman's axe than the hammerings of peckers, while its spread of wing and general bulk is to that of a crow; and, although a far less powerful Ivory-bill, it is nevertheless sure to attract the attention and excite the enthusiasm, of the ornithologist.

"The loud hammering of this large and vigorous sonorous dried trees, compared with which the smaller species is but a weak noise, very soon becomes the ear of the woodman; and may designate the presence. The old adage

tonishing manner. Very useful, indeed, must this bird be in preserving our primeval forests from the ravages of insects. Whether one notes his strong, undulating flight, his elastic bounding and springing along the trunks of the trees, the effective chiseling of his powerful bill, or his sonorous cackling, one is particularly impressed with the spirit and immense energy of the bird." (LANGILLE.)

GENUS **MELANERPES** SWAINSON.

SUBGENUS **Melanerpes**.

Melanerpes SWAINS. F. B.-A. II, 1831, 316. Type, *Picus erythrocephalus* LINN.

Melanerpes erythrocephalus (Linn.)

RED-HEADED WOODPECKER.

Picus erythrocephalus LINN. S. N. ed. 12, i, 1766, 174.—WILS. Am. Orn. i, 1808, 142, pl. 9, fig. 1.—NUTT. Man. i, 1832, 569.—AUD. Orn. Biog. i, 1832, 141, pl. 27; Synop. 1839, 184; B. Am. iv, 1842, 274, pl. 271.

Melanerpes erythrocephalus SWAINS. F. B.-A. II, 1831, 316.—BAIRD, B. N. Am. 1858, 113; Cat. N. Am. B. 1859, No. 94.—COUES, Key, 1872, 196; Check List, 1874, No. 309; 2d ed. 1882, No. 453; B. N. W. 1874, 290.—B. B. & R. Hist. N. Am. B. II, 1874, 564, pl. 54, fig. 4.—RIDGW. Nom. N. Am. B. 1881, 375.

HAB. Eastern United States and British Provinces, west to eastern base of Rocky Mountains, south to Florida and Texas; breeds throughout; irregularly or locally migratory. Rare in most parts of New England.

SP. CHAR. *Adult.* Entire head, neck, and jugulum uniform rich crimson, bordered below against white of breast, by a more or less distinct black line. Secondaries, rump, upper tail-coverts, and lower parts white, the abdomen usually more or less tinged with reddish. Back and scapulars glossy blue-black; wings, except secondaries, and tail deep black. Bill bluish white, darkening into plumbeous terminally; iris brown (varying from umber to chestnut); feet greenish gray. *Young.* Head, neck, and jugulum brownish gray, streaked with dusky. Back mixed black and grayish; secondaries with one or more black bands near ends.

Total length (fresh specimens), 9.25-9.75; extent, 17.00-17.75; wing, (skins), 5.30-5.70; tail, 3.60-3.75.

This splendid Woodpecker, to which belongs the honor of having been the first bird to excite the latent enthusiasm of Alexander Wilson, and determine him to be an ornithologist, is found throughout the State. In the more heavily wooded portions it is decidedly the most numerous member of the family. As a rule, it is, in the vicinity of Mount Carmel at least, and presumably in similar localities throughout the southern portion of the State, not only a permanent resident but is even more abundant in winter than in summer. Sometimes (probably very rarely), however, it makes a complete migration which is very difficult to account for.

... about as long as the head, or a little longer; to the nostril about equal to the tarsus, or a little greater; decidedly, but depressed at the extreme base; the lateral groove distinct the bill; culmen decidedly but gently curved from the base; g about half as long as the culmen. Nostrils broad, elliptical, situated between the culmen and tomium, and only partly concealed by the outer toe a little longer than the posterior, the inner anterior toe to the inner hind toe only about half its length. Wings long and primaries longest, the first equal to the sixth to the ninth. Tail about the wing, graduated, the feathers (except the outer) rather abrupt. Colors, banded with black and white, or yellow, above, with more scarlet in the male; below plain, the abdomen tinged with red, or species.

While only one species of *Centurus* occurs in America, two others are found along our south. *C. aurifrons* in southern Texas, and *C. uropygialis* in Mexico and Arizona. Other species belong to America, Cuba, Hayti, and Jamaica.

Melanerpes carolinus (Linn.)

RED-BELLIED WOODPECKER.

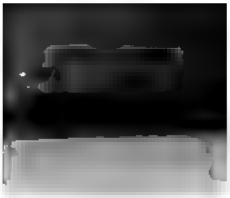
Popular synonyms. Carolina Woodpecker; Checkered Woodpecker; Zebra Woodpecker.

Picus carolinus LINN. S. N. ed. 10, i, 1758, 113; ed. 12, i, 1766, 174-1808, 115, pl. 7, fig. 2.—NUTT. Man. i, 1832, 572.—AUD. Orn. Biog. Synop. 1839, 183; B. Am. iv, 1842, 270, pl. 270.

Centurus carolinus BP. 1838.—BAIRD, B. N. Am. 1858, 109; Cat. N. A. COVES, Key, 1872, 196; Check List, 1874, No. 306; 2d ed. 1882, No. 450; B. B. & R. Hist. N. Am. B. ii, 1874, 289.—RIDGW. Nom. N. Am. B. *Melanerpes (Centurus) carolinus* RIDGW. Ann. Lyc. N. Y. Jan. 1

HAB. Eastern United States, rare northward, but occurring as far as Massachusetts; west, sparingly, to eastern base of Rocky Mountains; Florida and eastern Texas (except Rio Grande Valley).

SP. CHAR. *Adult male.* Entire pileum and nape bright scarlet, the forehead lighter, or more pinkish (sometimes approaching reddish); head and neck with lower parts, pale buff-grayish, lighter on the abdomen pinkish red the



nearly immaculate. Tail black; the inner webs of the *intermedia* chiefly white, crossed with a greater or less number of broad black bars, or transverse spots, the outer webs with a longitudinal stripe of white on the basal half; outer rectrices broadly barred at the ends with dull white, and with spots of the same indenting the outer web; next pair of feathers tipped with yellowish white. *Adult female*. Similar to the male, but red of the crown replaced by deep ash-gray, lighter anteriorly; lower parts tinged with red only on the abdomen, and cheeks with little if any red tinge. *Young female*. Whole plumage dull brownish gray, transversely mottled with darker; nape dull light fulvous red; back and scapulars barred with grayish white and grayish dusky, much less sharply than in the adult; abdomen tinged with dull buff, but without red. Total length (fresh specimens), .910% inches; extent, 15%–17%¹/₂; wing (skins), 4.85–5.40; tail, 3.50–3.90; culmen, 1.00–1.20; tarsus, .80–.90. Bill (in life), slate-black, the basal portion of gonys sometimes mixed with light ash; iris varying from ferruginous to bright scarlet; naked orbital spaces olivaceous ash; legs and feet olivaceous. In the *young*, iris brown.

Among adult males of this species, the principal variation is in the amount of red tinge on the lower parts. In most examples from the Atlantic States and in many from the Mississippi Valley, the reddish is entirely confined to the middle of the abdomen, while on the head there is a mere tinge of it on the lores and cheeks. Many western specimens, however, had the breast more or less strongly tinged with purplish pink, while two now before me (No. 84917, Kansas City, Mo., May 14, 1864, and another from Mount Carmel, Ill., May 28, 1878), have not only the lores and cheeks, but the whole chin and upper throat also, bright salmon-color, or saffron-pink. In these highly-colored specimens the forehead is a bright saffron-red, while the Kansas City specimen above alluded to has the red on the abdomen very intense, approaching a saffron-scarlet. An adult female from southern Illinois (Mount Carmel, October 18, 1879), has the occiput red, like the nape, while there are several red feathers in the middle of the crown.

Next to the Red-head (*Melanerpes erythrocephalus*) this is probably the most abundant Woodpecker in southern Illinois. It is also, perhaps with the same exception, the most conspicuous and, instead of being shy and retiring, as has been recorded of it by writers, it is almost constantly to be seen in orchards and the vicinity of houses, as well as in the depths of the forest. It is very fond of ripe apples, and where very abundant thus makes itself somewhat of a nuisance. Besides raiding the orchards it is also in winter a frequent visitor to the corn crib, to which it easily gains ingress between the logs and thus obtains an abundant supply of food. It

also said to be only a summer resident. Mr. Meade saw a pair in Lincoln Park, Chicago, they were evidently breeding there, as he saw them out of a hole in the dead top of an oak tree.

GENUS COLAPTUS SWAINSON

Colaptes SWAINSON, Zool. Jour. iii, Dec. 1827, 353. Type *C.*

"GEN. CHAR. Bill slender, depressed at the base, then curved, gonys straight; both with acute ridges, and coming to the commissure at the end; the bill consequently not truncate the bill. Nostrils basal, median, oval and exposed. Gonys culmen. Feet large, the anterior outer toe considerably longer, exceeding the secondaries; the feathers suddenly acute points." (*Hist. N. Am. B.*)

Excluding the *C. chrysoides*, Malh., which is extreme southwestern portion of the Union, (Arizona, California), the two remaining North American may be distinguished as follows:

COMMON CHARACTERS. Head and neck ashy or brown, unvaried malar patch in the male, and sometimes, in both sexes, a red malar patch. Back and wings brown, banded transversely with black; rump white. Beneath whitish, with circular black spots, and bands of dorsal crescent. Shafts and under surfaces of quills and tail-feathers.

1. *C. auratus*. Under surface and shafts of wings and tail rich nuchal crescent. Throat pinkish, top of head ashy. Male glossy black. HAB. Eastern North America.
2. *C. mexicanus*. Under surface and shafts of wings and tail rich nuchal crescent. Throat ash, top of head brownish. Male bright red. HAB. Western North America.

Distinct as these two forms appear to be, they are connected by a series of intermediate specimens which have puzzled ornithologists. This intermediate series is considered under the head of *C. hybridus* or *C. auratus*.

Colaptes auratus (Linn.)

FLICKER.

Popular synonyms. Yellow-hammer; Yellow-shafted Flicker; Wake-up; High-holder, or High-hole; Clape; Golden-winged Woodpecker; Pigeon Woodpecker.

Cuculus auratus LINN. S. N. ed. 10, i, 1758, 112.

Picus auratus LINN. S. N. ed. 12, i, 1766, 174.—WILS. Am. Orn. i, 1808, 45, pl. 3, fig. 1.—NUTT. Man. i, 1832, 561.—AUD. Orn. Biog. i, 1832, 191; v, 1839, 540, pl. 37; Synop. 1839, 184; B. Am. iv, 1842, 282, pl. 273.

Colaptes auratus SW. 1827.—BAIRD, B. N. Am. 1858, 118; Cat. N. Am. B. 1859, No. 97.—COUES, Key, 1872, 197; Check List, 1874, No. 312; 2d ed. 1882, No. 457; B. N. W. 1874, 292.—B. B. & R. Hist. N. Am. B. ii, 1874, 575, pl. 55, figs. 1, 2.—RIDGW. Nom. N. Am. B. 1881, No. 378.

HAB. Eastern and northern North America, including all wooded parts of Alaska, south to Sitka; south to Florida and eastern Texas, west to edge of Great Plains; casual in California.

"SP. CHAR. Shafts and under surfaces of wing- and tail-feathers gamboge-yellow. Male with a black patch on each side of the cheek. A red crescent on the nape. Throat and stripe beneath the eye pale lilac-brown. Back glossed with olivaceous green. Female without the black cheek-patch.

"ADDITIONAL CHARACTERS. A crescentic patch on the breast and rounded spots on the belly black. Back and wing-coverts with interrupted transverse bands of black. Neck above and on the sides ashy. Beneath pale pinkish brown, tinged with yellow on the abdomen, each feather with a heart-shaped spot of black near the end. Rump white. Length, 12.50; wing, 6.00." (*Hist. N. Am. B.*)

Wing, 5.50-6.40; tail, 4.50-4.90.

Specimens from Mt. Carmel measured, before skinning, as follows:

Adult males: Total length, 12.15-12.75; extent, 19.60-20.75.

Adult females: Total length, 12.00-12.25; extent, 19.25-19.75.

To so common and well-known a bird as the "Yellow-hammer" or Flicker, we need here give but a brief notice. It is universally distributed throughout the State, and is everywhere a permanent resident.

Colaptes hybridus (Baird.)

HYBRID FLICKER.

Colaptes ayresii AUD. B. Am. vii, 1843, 348, pl. 494.

Colaptes hybridus BAIRD, B. N. Am. 1858, 122; Cat. N. Am. B. 1859, No. 98a.

Colaptes auratus hybridus RIDGW. Nom. N. Am. B. 1881, No. 378a, 11.

Colaptes aurato-mexicanus SUNDEV. Consp. Av. Picin. 1866, 72.

HAB. Western United States, but chiefly the region of the upper Missouri, and thence across the northern border and south into California.

CHAR. Intermediate between *C. auratus* and *C. mexicanus*, the character of the two species being mixed in various degrees, in different specimens. Typical combinations are as follows:

... to *auratus*, but with red or orange-colored
tail; or like *mezicanus*, but with yellow feathers in wing or

ORDER COCCYGES.—THE CUCKOOS, ETC.

CHARACTERS. Bill variable in form, but never chisel-shaped at tip, the culmen usually more or less curved; tongue not extensible nor barbed at tip; feet zygodactyle, or else the middle and outer toes connected for at least half their length.

FAMILY ALCEDINIDÆ.—THE KINGFISHERS.

"CHAR. Head large, bill long, strong, straight, and sub-pyramidal, usually longer than the head. Tongue very small. Wings short; legs small, the outer and middle toes united to their middle. Toes with the usual number of joints (2, 3, 4, 5).

"The gape of the bill in the Kingfishers is large, reaching to beneath the eyes. The third primary is generally longest; the first decidedly shorter; the secondaries vary from twelve to fifteen in number, all nearly equal. The secondaries cover at least three quarters of the wing. The tail is short, the feathers twelve in number; they are rather narrow, the outer usually shorter. The lower part of the tibia is bare, leaving the joint and the tarsus uncovered. The tarsus is covered anteriorly with plates; behind, it is shagreen-like or granulated. The hind toe is connected with the inner, so as to form with it and the others a regular sole, which extends unbroken beneath the middle and outer as far as the latter are united. The inner toe is much shorter than the outer. The claws are sharp; the middle expanded on its inner edge, but not pectinated." (*Hist. N. Am. B.*)

GENUS CERYLE BOIE.

Ceryle BOIE, Isis, 1833, 316. Type, *Alcedo rudis* FINN.

"GEN CHAR. Bill long, straight, and strong, the culmen slightly advancing on the forehead and sloping to the acute tip; the sides much compressed; the lateral margins rather dilated at the base, and straight to the tip; the gonys long and ascending. Tail rather long and broad. Tarsi short and stout.

"This genus is distinguished from typical *Alcedo* (confined to the Old World) by the longer tail, an indented groove on each side the culmen, inner toe much longer than the hinder instead of equal, etc." (*Hist. N. Am. B.*)

Only one species occurs in eastern North America, except in southern Texas, where the *C. cabanisi*, of tropical distribution, is found.

Ceryle alcyon BOIE, 1828.—BAIRD, B. N. Am. 1858, 158; C&C
COURS, Key, 1872, 188; Check List, 1874, No. 286; 2d ed.
372.—B. B. & R. Hist. N. Am. B. II, 1874, 392, pl. 45, fig. 6.—
No. 382.

HAB. Whole of North America, south (in winter only ?)
throughout West Indies.

SP. CHAR. Bluish plumbeous above, white beneath; nape
breast with a plumbeous or brownish band. Head with a double
feathers. *Adult male*. Sides white, tinged with plumbeous.
a more or less complete band across belly, rufous. *Young*.
the male with the breast-band and color of sides tinged with ru

Total length (fresh specimens), 13.50-14.50; extent, 22.50-24.0
tail, 3.80-4.30.

The Belted Kingfisher is to be found wherever
ponds, or lakes, affording a sufficient supply of its
a summer resident, but has been frequently observed
winters in the southern counties.

"The Kingfisher," says Dr. Brewer,* "is an e
species. It is never found other than in solitary
are very rarely seen together. They feed almost e
which they capture by plunging into the water,
always swallow whole on emerging from their
portions of their food, such as scales, bones, et
power of occasionally ejecting from their stom
usually be noticed by the sides of streams, mill
stationed on some convenient position that enab
look a deep place suitable for their purpose, and
a plunge without accomplishing their object."

"They nest in deep holes excavated by them
of streams, ponds or cliffs, not always in the im
water. These excavations are often near their a
grounds, in some neighboring lake or small
ground almost

ging through a soft fine sand bank, their progress is surprising, sometimes making a deep excavation in a single night. The pages of "The American Naturalist" contain several animated controversies as to the depth, the shape, and the equipment of these passages. The result of the evidence thus given seems to be that the holes the Kingfishers make are not less than four nor more than fifteen feet in length; that some are perfectly straight, while some, just before their termination, turn to the right, and others to the left; and that all have, at or near the terminus, an enlarged space in which the eggs are deposited. Here the eggs are usually laid on the bare sand, there being very rarely, if ever, any attempt to construct a nest. The use of hay, dry grass, and feathers, spoken of by the older writers, does not appear to be confirmed by more recent testimony. Yet it is quite possible that in certain situations, the use of dry materials may be resorted to, to protect the eggs from a too damp soil."

BIRDS OF ILLINOIS.

FAMILY CUCULIDÆ.—THE CUCKOOS.

compressed, usually more or less lengthened and with decurved culmen, with or none. Nostrils exposed, no nasal tufts. Tail long and soft, of eight or ten feathers. Toes in pairs, deeply cleft or not united, the outer anterior toe but directed rather laterally than backward.

They form a strongly marked group of birds, easily distinguished among the *Zygodactylæ* by the characters given above. The bill is versatile, but in the American forms is more directed posterior, in the skin standing sideways, or even anteriorly than behind." (*Hist. N. Am. B.*)

Several subfamilies which have been recognized by authors, are found along to eastern North America, and of these two are native to our region. They may be characterized

Bill covered with feathers; bill elongated, more or less cylindrical or curved. Tail of ten feathers, the length of the head, or not longer; curved. Tail feathers

"The species of *Coccyzus* are readily distinguished from those of *Geococcyx* by their arboreal habits, confining themselves mainly to trees, instead of living habitually on the ground. The plumage is soft, fine and compact.

"The American Cuckoos differ from the European (*Cuculus*) by having lengthened naked tarsi, instead of very short feathered ones. The nostrils, too, are elongated instead of rounded. The habits of the two are entirely different, the American species rearing their young, instead of laying eggs in the nests of other birds, like the European Cuckoo and the American Cowbird (*Molothrus pecoris*)." (*Hist. N. Am. B.*)

The two species of *Coccyzus* which are entitled to notice here may be distinguished by the following characters:

1. *C. americanus*. Tail feathers (except middle pair) black with broad white tips. Inner webs of primaries mostly rufous. Mandible and bare orbits yellow.
2. *C. erythrophthalmus*. Tail feathers grayish brown, with very narrow tips of dull whitish. Inner webs of primaries rufous only in young. Mandible bluish (blackish in dried skins), bare orbits deep red in the adult (yellow in young).

Coccyzus americanus (Linn.)

YELLOW-BILLED CUCKOO.

Popular synonyms. Rain Crow; Wood Pigeon; Cow-cow.

Cuculus americanus LINN. S. N. ed. 12, 1, 1766, 170

Coccyzus americanus BP. 1825.—NUTT. Man. 1, 1832, 551.—AUD. Orn. Biog. 1, 1832, 18; v. 1839, 520, pl. 2; Synop. 1839, 187; B. Am. iv, 1842, 283, pl. 275.—COUES, Key, 1872, 190; Check List, 1874, No. 291; 2d ed. 1882, No. 429; B. N. W. 1874, 275.—RIDGW. Nom. N. Am. B. 1881, No. 387.

Coccyzus americanus CAB. 1856.—BAIRD, B. N. Am. 1853, 76; Cat. N. Am. B. 1859, No. 69.—B. B. & R. Hist. N. Am. B. ii, 1874, 477, pl. 48, fig. 4.

Cuculus carolinensis WILS. Am. Orn. iv, 1811, 12, pl. 28.

HAB. United States in general, especially the Eastern Province (irregularly distributed in the Western), north to British Provinces; in winter, south through Mexico and Central America as far as Costa Rica, and also many of the West India Islands. Accidental in Europe.

"**SP. CHAR.** Upper mandible and tip of lower, black; rest of lower mandible and cutting edges of the upper, yellow. Upper parts of a metallic greenish olive, slightly tinged with ash towards the bill; beneath white. Tail feathers (except the median, which are like the back) black, tipped with white for about an inch on the outer feathers, the external one with the outer edge almost entirely white. Quills orange-cinnamon; the terminal portion and a gloss on the outer webs olive; iris brown. Length, 12.00; wing, 5.95; tail, 6.35." (*Hist. N. Am. B.*)

There is considerable variation in the amount of rufous in the quills; sometimes this shows very distinctly externally, sometimes it is entirely replaced by the bronzed olive of the back. A greater amount of the rufous seems to characterize the more southern and

CUCKOO.

This bird, familiarly known as the Rain Crow-cow, is a summer resident of all portions more abundant southward, its range being temporary to that of the black-billed species, which is northward.

While habitually building its own nest, and in this species as well as *C. erythrophthalmus* it imposes on one another, but also, though more rarely. Of this fact there is much indisputable evidence. It is also a well-known fact that in nests of both is not an uncommon thing to find not only eggs of incubation but also young and freshly laid in the nest. Colonel S. T. Walker, of Milton, Florida, has told Baird that he has found young birds in the nest with others half fledged, and some just hatched, and also one or two fresh eggs. He is not sure whether or not in the same nest or whether the same bird continued setting. From what he has seen, however, he is inclined to think that the latter is the case, and that "the old bird upon which the young first hatched to continue the incubation subsequently laid."

Regarding this point it may be stated that the European Cuckoo (*Cuculus canorus*) is supposed to have the very slow development of the eggs in the ovary, which is practically impossible for themselves to attend to their eggs; and it may be suggested that the circumstances alluded to by Col. Walker allude, and which have been noted by others, arise from the same cause. Furthermore since, as is known also that both the American Cuckoos

an egg in the nest of the other, or even in other birds' nests, it is not at all improbable that they may eventually become completely parasitic, like their European cousins.

Coccyzus erythrophthalmus (Wils.)

BLACK-BILLED CUCKOO.

Cuculus erythrophthalmus WILS. Am. Orn. iv, 1811, 16, pl. 27, fig. 2.

Coccyzus erythrophthalmus BP. 1825.—AUD. Orn. Biog. i, 1832, 170, pl. 32; Synop. 1839, 187; B. Am. iv, 1842, 300, pl. 276.—COUES, Key, 1872, 199; Check List, 1872, No. 230; 2d ed. 1882, No. 428; B. N. W. 1874, 274.—RIDGW. Nom. N. Am. B. 1881, No. 388.

Coccyzus erythrophthalmus CAB. 1856.—BAIRD, B. N. Am. 1858, 77; Cat. N. Am. B. 1859, No. 70.—B. B. & R. Hist. N. Am. B. ii, 1874, 484, pl. 48, fig. 5.

Coccyzus dominicus "LINN." NUTT. Man. i, 1832, 556 (*nec* LINN.)

HAB. Eastern North America, north to Labrador, west to Rocky Mountains; south in winter, through eastern Mexico and Central America to the Amazon Valley; Cuba (and Florida?) in winter. Accidental in Europe.

"SP. CHAR. Bill entirely black. Upper parts generally of a metallic greenish olive, ashy towards the base of the bill; beneath pure white, with a brownish yellow tinge on the throat. Inner webs of the quills tinged with cinnamon. Under surface of all the tail-feathers hoary ash-gray. All, except the central on either side, suffused with darker to the short, bluish white, and not well-defined tip. A naked red skin round the eye. Length, about 12.00; wing, 5.00; tail, 6.50." (*Hist. N. Am. B.*)

"First plumage: female. Above lustrous plumbeous ashy, feathers upon the crown, nape, and anterior part of the back, narrowly tipped with pale ashy; those of the interscapular region and rump, together with the scapulars and upper tail-coverts, more broadly so with ashy white. Outer edges of quills light rufous. Beneath delicate pearl-gray, lightest on the abdomen, slightly tinged with pale brownish yellow on the throat and breast. From a specimen in my collection shot in Lincoln, Mass., June 17, 1871. Autumnal specimens (probably only the young birds) differ from spring adults in having the naked skin around the eye yellow instead of red." (BREWSTER, Bull. Nutt. Orn. Club, Oct. 1878, p. 178.)

Popularly confounded with the Yellow-billed Cuckoo, this species closely resembles it in habits and in general appearance. They may not frequently be found in the same localities, as evidence of which it may be stated that the writer once found a nest of each in adjoining trees in an apple orchard, near Mt. Carmel. In the vicinity of the place just mentioned it is far rarer than the *C. americanus*, occurring in about the proportion of one to twenty-five of the latter; but to the northward it increases in numbers until in the northern portion of the State, it is perhaps more common than *C. americanus*.

CHAR. Bill deep and strongly hooked, the upper mandible lower, and furnished at base with a distinct cere, or else the short feathers; feet zygodactyle.

FAMILY PSITTACIDÆ.—THE P

CHAR. Bill greatly hooked; the maxilla movable and with in the base of the bill. Feet scansorial, covered with granulated

GENUS CONURUS KUHLM.

Conurus KUHLM., Consp. Psittac. 1820, 4. Type *Psittacus carolinensis*

GEN. CHAR. Tail long, conical, and pointed; bill stout; in some species leaving a naked ring round the eyes; cere feathered

"The preceding diagnosis, though not very full, indicates the essential characteristics of the genus. American forms with long pointed tails, the most consisting in the densely feathered, not naked, species belongs to the United States, though three in Mexico, and many more in South and Central species occur in the West Indies." (*Hist. N. Am.*

Conurus carolinensis (Linn.)

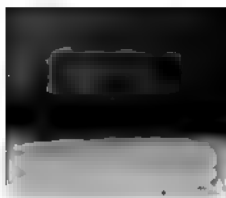
CAROLINA PAROQUET.

Popular synonym. Illinois Paroquet.

Psittacus carolinensis LINN. S. N. ed. 12, i, 1766, 141.—WILSON. Am. Orn. ed. 1811, fig. 1.—NUTT. Man. i, 1832, 545.—AUD. Orn. Biog. v, 1832, 135, pl. 1.
Conurus carolinensis LESS. 1831.—BAIRD, B. N. Am. 1858, 67; Cat. Birds, Key, 1872, 199; Check List, 1874, No. 315; 2d ed. 1882, 296.—B. B. & R. Hist. N. Am. B. ii, 1874, 587, pl. 56, figs. 1, 2.—R. 1881, No. 392.

Centurus (error *carolinensis*) AUD. Synop. 1839, 189; B. Am. iv, 1

HAB. Now confined to limited portions of Florida and the Gulf of the lower Mississippi Valley, north to Arkansas and Indian Territory, southern Mississippi and extreme southern portion of Illinois. throughout the Mississippi Valley, east to the Allegheny Mountains, Great Lakes, west to Nebraska.



pure gamboge-yellow. Edge of wing tinged with orange. Bill creamy white; eyelids whitish; iris blackish brown; feet whitish. *Young.* Similar, but no yellow on head or neck, which are green, the forehead only, or forehead and lores, dull orange-red.

Wing, 7.20-7.60; tail, 6.40-7.10.

The avian-fauna of Illinois has lost no finer or more interesting member than the present species, which is probably now everywhere extinct within our borders, though fifty years ago it was of more or less common occurrence throughout the State. The National Museum possesses a fine adult example from Illinois (Cat. No. 12272), another from Michigan, and several from the Platte River, in Nebraska; now, however, it appears to be quite exterminated except in isolated and rapidly contracting areas in Florida, and thence westward to the lower Mississippi Valley. Its present northern limit in the interior is uncertain, but so far as known is the eastern part of the Indian Territory and portions of Arkansas. In the opinion of the best judges, twenty-five years hence the species will exist only in museums and in literature.

An outline of its former distribution is thus given by Dr. Brewer, in *History of North American Birds*, Vol. II., p. 580:

"In descending the Ohio in the month of February, Wilson met the first flock of Parakeets at the mouth of the Little Scioto. He was informed by an old inhabitant of Marietta that they were sometimes, though rarely, seen there. He afterwards observed flocks of them at the mouth of the Great and Little Miami, and in the neighborhood of the numerous creeks which discharge themselves into the Ohio. At Big Bone Lick, near the mouth of the Kentucky River, he met them in great numbers. They came screaming through the woods, about an hour after sunrise, to drink the salt water, of which, he says, they are remarkably fond.

"Audubon, writing in 1842, speaks of the Parakeets as then very rapidly decreasing in number. In some regions, where twenty-five years before they had been very plentiful, at that time scarcely any were to be seen. At one period, he adds, they could be procured as far up the tributary waters of the Ohio as the Great Kanawha, the Scioto, the head of the Miami, the mouth of the Maumee at its junction with Lake Erie, and sometimes as far northeast as Lake Ontario. At the time of his writing very few were to be found higher than Cincinnati, and he estimated that along the Mississippi there were not half the number that had existed there fifteen years before."

several, and therefore had the expected
the above statement.

The Carolina Parakeet breeds very readily
arrangements are made for the purpose.

ORDER ACCIPITRES - THE HAWKS

ORDER ACCIPITRES - THE HAWKS

SUBORDER STRIGES - THE OWLS

CHAR. FEW LOSTING

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Striges are

Striges are

BIRDS OF ILLINOIS.

FAMILY STRIGIDÆ.—THE BARN OWLS.

toe equal to the middle in length; inner edge of middle claw pectinated
than the third; all the quill with their inner web entire, or without
all emarginated. Feathers of the posterior face of the tarsus recurved,
ls.

Strigide includes, so far as known, but two genera,
Nyctalus. The former is cosmopolitan, having species in
parts of the world, with the exception of the colder
Nyctalus is restricted to a limited portion of the Indian
and not be further mentioned here.

GENUS STRIX LINNÆUS.

[. ed 10, 1, 1758, 92 Type, *Strix flammea* LINN.
orn. Met. Dig. 1, 1767, 89.

Size medium No ear-tufts; facial ruff entirely continuous, very long, the first or second quill longest, and all without emargina-
emarginated. Bill elongated, uniserial, from the base of the mandible to the tip of the beak.

Striz flammea d. americana COUES, B. N. W. 1874, 298.

Aluco flammeus americanus RIDGW. Nom. N. Am. B. 1881, No. 394.

HAB. United States generally, but more rare northward, and wanting in unwooded districts; south through Mexico; north, occasionally, to Canada.

SP. CHAR. *Usual plumage.* Ground-color of the upper parts bright orange-ochraceous; this overlaid in cloudings, on nearly the whole of the surface, with a delicate mottling of blackish and white, the mottling continuous on the back and inner scapulars, and on the ends of the primaries more faint, while along their edges it is more in the form of fine dusky dots, thickly sprinkled. Each feather of the mottled surface (excepting the secondaries and primaries) has a median dash of black, enclosing a roundish or cordate spot of white near the end of the feather; on the secondaries and primaries the mottling is condensed into indistinct transverse bands, which are about four in number on the former and five on the latter; primary coverts deeper orange-rufous than the other portions, the mottling principally at their ends. Tail orange-ochraceous, finely mottled—most densely terminally—with dusky, fading into whitish at the tip, and crossed by about five distinct bands of mottled dusky. Face white, tinged with wine-red; an ante-orbital spot of dark claret-brown, this narrowly surrounding the eye; facial circle, from forehead down to the ears (behind which it is white for an inch or so) soft orange-ochraceous, similar to the ground-color of the upper parts, the lower half (from ears across the throat) deeper ochraceous, the tips of the feathers blackish; the latter sometimes predominating. Lower parts snowy white, but this more or less overlaid with a tinge of fine orange-ochraceous, lighter than the tint of the upper parts; and, excepting on the jugulum, anal region, and crissum, with numerous minute but distinct specks of black; under surface of wings delicate yellowish white, the lining sparsely sprinkled with black dots; inner webs of primaries with transverse bars of mottled dusky near their ends.

Extreme plumages. Darkest (Male, No. 6,884, Tejon Valley, Cal.; Dr. Heermann): There is no white whatever on the plumage, the lower parts being continuous light ochraceous; the tibiae have numerous round spots of blackish. Lightest (No. 6,885, same locality): Face and entire lower parts immaculate snow-white; facial circle white, with the tips of the feathers orange; the secondaries, primaries, and tail show no bars, their surface being uniformly and finely mottled.

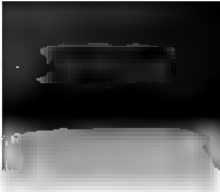
Measurements. (Male, No. 6,884, Tejon Valley, Cal.; Dr. Heermann): Wing, 13.00; tail, 5.70; culmen, .90; tarsus, 2.50; middle toe, 1.25. Wing formula, 2, 1-3. Among the very numerous specimens in the collection, there is not one marked female. The extremes of a large series are as follows: Wing, 12.50-14.00; tail, 5.70-7.50; culmen, .90-1.10; tarsus, 2.55-3.00.

The American Barn Owl, although generally distributed and in some localities common or even abundant, is by no means well known to the general public. It is the bird which has figured so often in the newspapers as the rare, remarkable, or anomalous "Monkey-faced Owl"—"only two specimens known," "Barnum offered five hundred dollars for this one," etc., with variations, according to circumstances. It is rather a southern bird, being rarely, if ever, found north of the Great Lakes, while it is probably common nowhere north of the parallel of 40°, except perhaps in California.

Regarding its habits, it may be said that it is decidedly nocturnal, like many other owls, and that it has a special predilection for church towers and abandoned or little frequented buildings of

area, or Monroe, Ohio, published in the C
for October, 1884, p. 124.

"The Barn Owl is undoubtedly a very use
having as it has, an almost unlimited pencil
Two or three pairs of these birds would in
destroy many hundreds of these pests that
grain sheds. I quote the following from Mr.
Barn Owl in the Cincinnati Natural History
up into the tower of the 'town hall' of the
(where several of these owls were secured t
astonished at the sight presented. The fl
covered with the cast-up pellets of the birds.
of these pellets, and they must have contained
thousand rats and mice.' This is certainly evic
value of these birds. Mr. Dury also states
living in harmony with the several pairs of tam
their quarters in the tower."



FAMILY BUBONIDÆ.—THE OWLS.

The characters of this family having been given with sufficient detail on page 899, they need not be repeated nor enlarged upon here. The North American genera may be distinguished as follows:

- A.** External ear excessively large (extending almost entirely across the head) furnished with an operculum or "flap" along the anterior margin, those of the opposite sides very unlike in form; skull also in some genera very asymmetrical. (*Asioninae*.)
 - a.** Size medium to very large (wing 11.50 inches or more).
 - 1. **Asio.** Size medium (wing 11.50-13.00 inches); cere large and arched, its length on top exceeding the chord of the culmen; nostrils large, horizontally oval, opening laterally; only one to two outer quills with inner webs emarginated; head proportionally small, the ear-tufts variable as to development.
 - 2. **Syrnium.** Size medium, or rather large (wing 12 inches or more); cere on top shorter than chord of culmen; nostril comparatively small, nearly circular; four or five outer primaries with inner webs emarginated; head proportionally large, with no indication whatever of ear-tufts. Toes partly or entirely naked. Eyes moderately large, black, or dark brown.
 - 3. **Scotioptes.** Size very large (wing 15.00 or more); cere on top longer than chord of culmen, the nostrils as in *Syrnium*; six outer quills with inner webs emarginated; head large, and without trace of ear-tufts. Toes densely clothed with long hair-like feathers. Eyes small, yellow.
 - b.** Size very small (wing less than 8 inches).
 - 4. **Nyctala.** Cere on top decidedly shorter than chord of culmen; nostrils small, vertically oval, opening in anterior edge of the inflated membrane; two outer quills with inner webs emarginated; head proportionally very large, without distinct ear-tufts.
- B.** External ear small, vertically oval, or nearly circular, without operculum, the two of opposite sides not differing in size or contour; skull always symmetrical. (*Buboninae*.)
 - a.** Nostrils opening in the anterior edge of the flat nasal membrane.
 - 5. **Megascops.** Size small (wing less than 8.00 inches). Two to five quills with inner webs emarginated, the second to the fifth longest. Bill weak, light-colored; iris usually yellow (said to be brown in *M. flammeolus*). Ear-conch elliptical, about one third the height of the head, with a slightly elevated fringed anterior margin. Ear-tufts usually well developed.
 - 6. **Bubo.** Size large (wing 12.00 inches or more). Two or three outer quills with inner webs emarginated, the third or fourth quills longest. Bill robust, black; iris usually yellow (brown in *B. mexicanus*). Ear-conch as in *Megascops*, but without the elevated anterior margin, and from one third to one half the height of the skull. Ear-tufts well developed; lower tail-coverts not reaching end of tail; toes covered with short feathers, the claws (and sometimes the terminal scutellæ) wholly exposed; bill not concealed by loreal bristles.

- webs emarginated, the third longest. Bill strong.
8. *Speotyto*. Size very small (wing about 5 inches). Ear-conch oval, simple, less than the diameter of the nostril.
9. *Glaucidium*. Size very small (wing less than 4.50 inches). Ear-conch oval, simple, less than the diameter of the nostril.
10. *Microathene*. Size very small (wing less than 4.50 inches). Ear-conch oval, simple, less than the diameter of the nostril.
11. *Speotyto*. Size moderately small (wing about 7.00 inches). Ear-conch oval, simple, less than the diameter of the nostril.

GENUS ASIO BRISSON.

Asio BRISS. ORN. I, 1760, 23. Type, *Strix otus* LINN.
Otus CUV. LEC. ANAT. COMP. 1799, tab. II. Same type.
Brachyotus GOULD, P. Z. S. 1837, 10. Type *Strix brachyotus* PALL.

GEN. CHAR. Size medium. Ear-tufts well developed or eyes small. Cere much arched, its length more than the cere. Only the first, or first and second, outer feathers emarginated. Tail about half the wing, rounded. Ear-conch as the height of the skull, with an anterior operculum, which is bordered posteriorly by a raised membrane, the two ears asymmetrical.

The two North American species belong to the following:

- A. Ear-tufts greatly developed. (*Asio*.)
1. *A. wilsonianus*. Above finely-vermiculated dusky brown; former prevailing; lower parts whitish (buffy) beneath, with transverse dusky bars, which are much broader than the spaces between them.
 2. *A. accipitrinus*. Ground-color (above and below) ochraceous, whitish, striped, but not barred.

arctic region, but is sufficiently distinct. Of the subgenus *Brachyotus* there are two American species besides the nearly cosmopolitan *A. accipitrinus*, namely, *A. galapagoensis* GOULD, confined to the Galapagos Islands, and *A. portoricensis* RIDGW., peculiar to the island of Porto Rico.

Asio wilsonianus (Less.)

AMERICAN LONG-EARED OWL.

Popular synonym. Lesser Horned Owl.

Strix otus WILS. Am. Orn. vii, 1812, 73, pl. 51, fig. 3 (*nec* LINN).—NUTT. Man. i, 1832, 130.—

AUD. Orn. Biog. iv, 1835, 573, pl. 83.

Strix (Asio) otus SW. & RICH. F. B.-A. ii, 1831, 72.

Otus wilsonianus LESS. Traité, i, 1831, 110.—CASS. in Baird's B. N. Am. 1858, 53.—BAIRD, Cat. N. Am. B. 1859, No. 51.

Otus vulgaris var. *wilsonianus* ALLEN, 1872.—COUES, Key, 1872, 204; Check List, 1873, No. 320.—B. B. & R. Hist. N. Am. B. iii, 1874, 18.

Otus vulgaris b. *wilsonianus* COUES, B. N. W. 1874, 304.

Asio wilsonianus COUES, 2d Check List, 1882, No. 472.

Otus vulgaris americanus SCHLEG. 1862. (*Nec Strix americana* GMEL.)

Asio otus, subsp. n. *Asio americanus* SHARPE, Cat. B. Brit. Mus. ii, 1875, 229.

Asio americanus RIDGW. Nom. N. Am. B. 1881, No. 395.

HAB. North America in general, north to the limit of forests, south to Mexican tablelands.

SP. CHAR. Adult. Upper surface transversely mottled with blackish brown and grayish white, the former predominating, especially on the dorsal region; feathers of the nape and wings ochraceous beneath the surface; lower scapulars with a few obsolete spots of white on lower webs. Primary coverts dusky, with transverse series of dark mottled grayish spots, these becoming somewhat ochraceous basally; ground color of the primaries grayish, this especially prevalent on the inner quills; the basal third (or less) of all ochraceous, this decreasing in extent on inner feathers, the grayish tint everywhere finely mottled transversely with dusky, but the ochraceous unvaried; primaries crossed by a series of about seven quadrate blackish brown spots, these anteriorly about as wide as the intervening yellowish or mottled grayish; the interval between the primary coverts and the first of these spots about .80 to 1.00 inch on the fourth quill, the spots on the inner and outer feathers approaching the coverts, or even underlying them; the inner primaries—or, in fact, the general exposed surface—with much narrower bars of dusky. Ground color of the wings like the back, this growing paler on the outer feathers, and becoming ochraceous basally, the tip approaching whitish; secondaries crossed by nine or ten narrow bands of dusky.

Ear-tufts with the lateral portion of each web ochraceous, this becoming white, somewhat variegated with black, toward the end of the inner webs, on which the ochraceous is broadest; median portion clear, unvariegated black. Forehead and postauricular disk minutely speckled with blackish and white; facial circle continuous black, becoming broken into a variegated collar across the throat. "Eyebrows" and lores grayish white; eye surrounded with blackish, this broadest anteriorly above and below, the posterior half being like the ear-coverts. Face plain ochraceous; chin and upper part of the throat immaculate white. Ground-color below pale ochraceous, the exposed surface of the feathers, however, white; breast with broad longitudinal blotches of clear dark brown; each feather and sides and flanks marked with a median stripe, crossed by as broad, or broader, transverse bars, of blackish brown; abdomen, tibial plumes, and legs plain ochraceous, becoming nearly white on the lower part of tarsus and on the toes; tibial

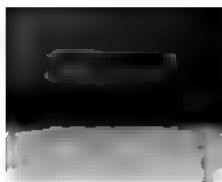
...entirely black; legs white.

Western specimens apparently average eastern ones, some of the latter being very I have seen from the West.

The American Long-eared Owl is closely related to *A. otus*, but seems sufficiently distinct. The parts striped, instead of confusedly mottled, parts ochraceous on the surface, relieved by stripes (but not distinct bars), of dusky.

The Long-eared Owl is a species of very yet few of our owls are less generally known. strictly nocturnal habits and its predilection such as are not everywhere to be found. Its dense willow thickets, where it may be surprised at nap, standing bolt upright, with feather its body, and long ear-tufts erect, thus presenting a peculiar figure.

"The usual number of eggs laid by the Long-eared Owl on the Pacific coast is five, although six in a set are not uncommon. When fresh, the eggs are of a bright white color, equally rounded on both ends and rather globular in shape, average about 1.60 inches in length by 1.32 in diameter, considerably in size, but rarely in shape. It commences laying during the first week in April, and they rear but a single brood in a season. They sometimes occupy the same nest for several seasons, if not destroyed. The eggs are hatched in about sixteen days, and the first two weeks are covered with a thick grayish down, consists principally of mice and the young of the owl if they are not taken care of."

SUBGENUS *Brachyotus* GOULD.*Asio accipitrinus* (Pall.)

SHORT-EARED OWL.

Popular synonyms. Marsh Owl; Meadow Owl; Prairie Owl.

Strix accipitrina PALL. Reiss. Russ. Reichs. i, 1771-76, 455.

Asio accipitrinus NEWT. ed. Yarrell's Brit. B. i, 1872, 163.—RIDGW. Nom. N. Am. B. 1881, No. 396.—COUES, 2d Check List, 1882, No. 473.

Strix brachyotus FORST. Phil. Trans. lxi, 1772, 384.—WILS. Am. Orn. iv, 1812, 64, pl. 33, fig. 3.—NUTT. Man. i, 1832, 132. AUD. Orn. Biog. v, 1839, 273, pl. 432.

Otus brachyotus BOIE, 1822.—AUD. Synop. 1839, 28; B. Am. i, 1840, pl. 38.

Otus (*Brachyotus*) *brachyotus* B. B. & R. Hist. N. Am. B. iii, 1874, 22.

Strix palustris BECHST. Nat. Deutschl. ii, 1791, 344.

Brachyotus palustris BP. 1838.—COUES, Key, 1872, 204; Check List, 1874, No. 331; B. N. W. 1874, 306.

Brachyotus cassini BREWER, Proc. Bost. Soc. Nat. Hist. 1856, 321.—CASS. in Baird's B. N. Am. 1858, 54.—BAIRD, Cat. N. Am. B. 1859, No. 52.

HAB. Nearly cosmopolitan; whole Northern Hemisphere, including Sandwich Islands, and all of America, from Arctic coast to Cape Horn. (Replaced, however, in Porto Rico and Galapagos by *A. portoricensis* and *A. galapagoensis*, respectively.)

SP. CHAR. *Adult.* Ground-color of the head, neck, back, scapulars, rump, and lower parts, pale ochraceous; each feather (except on the rump) with a median longitudinal stripe of blackish brown—this broadest on the scapulars; on the back, nape, occiput, and jugulum, the two colors about equal; on the lower parts, the stripes grow narrower posteriorly, those on the abdomen and sides being in the form of narrow lines. The flanks, legs, anal region, and lower tail-coverts are always perfectly immaculate; the legs most deeply ochraceous, the lower tail-coverts nearly pure white. The rump has indistinct crescentic marks of brownish. The wings are variegated with the general dusky and ochraceous tints, but the markings are more irregular, the yellowish in form of indentations or confluent spots, approaching the shafts from the edge—broadest on the outer webs. Secondaries crossed by about five bands of ochraceous, the last terminal; primary coverts plain blackish brown, with one or two poorly defined transverse series of ochraceous spots on the basal portion. Primaries ochraceous on the basal two thirds, the terminal portion clear dark brown, the tips (broadly) pale brownish yellowish, this becoming obsolete on the longest; the dusky extends toward the bases, in three to five irregularly transverse series of quadrate spots on the outer webs, leaving, however, a large basal area plain ochraceous, this somewhat more whitish anteriorly. The ground-color of the tail is ochraceous, becoming whitish exteriorly and terminally, crossed by five broad bands (about equaling the ochraceous, but becoming narrower toward outer feathers) of blackish brown; on the middle feathers, the ochraceous spots enclose smaller, central transverse spots of blackish; the terminal ochraceous band is broadest. Eyebrows, lores, chin, and throat soiled white, the loreal bristles with black shafts; face dingy ochraceous white, feathers with darker shafts; eye broadly encircled with black. Postorbital circle minutely speckled with pale ochraceous and blackish, except immediately behind the ear, where for about an inch it is uniform dusky. Lining of the wing immaculate delicate yellowish white; terminal half of under primary coverts clear blackish brown; under surface of primaries plain delicate ochraceous white; ends and one or two very broad anterior bands, dusky. Wing, 11.80-13.00; tail, 5.30-6.10; culmen, 60-65; tarsus, 1.75; middle toe, 1.20.

standing the fact that this species is not so common in the Australian range (the Australian region being the world where it is wanting), and also that it is not so noticeable in the plumage of the different species. In this it is proved of the futility of any attempt to separate the birds from different countries. In this it is referred to Vol. IV., of the "Proceedings" of the Museum, pp. 366-371, where the subject is treated.

In Illinois the Short-eared Owl occurs in all parts of the State either as a winter visitant or resident, and is especially common on the prairies. Mr. Nelson says (in *Bull. Es.* 117,) the following of it as observed by him in the State:

"The most abundant species of the family is the Short-eared Owl. It comes north in large numbers the first of November, and remains in the State. They are common everywhere, on prairies and in the woods during the winter. They remain concealed in a bush or among the trees until about two o'clock p. m., when they come out to hunt the ground in search of their prey. When approaching on the ground, they crouch and try to escape in the manner of the Burrowing Owl. They are easily tamed."

GENUS **SYRNIUM** SAVIGNY

Syrnium SAVIGNY, Desc. de l'Egypte, 1809, 298, et AUCTORUM.
stridula LINN., = *S. aluco* LINN.

GEN. CHAR. Size varying from medium to very large. Head large; the eyes comparatively small. Five outer primaries, well developed. Tarsi and upper portion of the toes densely clothed with feathers. Toes, however, sometimes entirely naked. Tail considerably longer than the wing, decidedly rounded. Ear orifice very high, but not furnished with an anterior operculum. Length of the two outer

Syrnium nebulosum (Forst.)**BARRED OWL.**

Popular synonym. Hoot Owl.

Strix nebulosa FORST. Phil. Trans. lxii, 1772, 386, 424.—WILS. Am. Orn. iv, 1812, 61, pl. 33, fig. 2.—NUTT. Man. i, 1832, 133.—AUD. Orn. Blog. i, 1832, 242; v, 1839, 386, pl. 46.—RIDGW. Nom. N. Am. B. 1881, No. 397.—COUES. 2d Check List, 1882, No. 476.

Syrnium nebulosum BOIE, 1828.—AUD. Synop. 1839, 27; B. Am. i, 1840, 132, pl. 36.—CASS. in Baird's B. N. Am. 1858, 56.—BAIRD, Cat. N. Am. B. 1859, No. 54.—COUES, Key, 1872, 204; Check List, 1873, No. 323; B. N. W. 1874, 308 (b. *nebulosum*).—B. B. & R. Hist. N. Am. B. iii, 1874, 29 (var. *nebulosum*).

HAB. Eastern North America, north to Hudson's Bay, south to Georgia and eastern Texas, west to the edge of the Great Plains. (Replaced in Florida by *S. nebulosum alleni*, a race with perfectly naked toes and somewhat different coloration.)

SP. CHAR. *Adult.* Head, neck, breast, back, scapulars, and rump with broad regular transverse bars of ochraceous white and deep umber-brown, the latter color always terminal; on the upper surface the brown somewhat exceeds the whitish in width, but on the neck and breast the white rather predominates. The lower third of the breast is somewhat differently marked from the upper portion, the brown bars being connected along the shafts of the feathers, throwing the white into pairs of spots on opposite webs. Each feather of the abdomen, sides, flanks, and lower tail-coverts has a broad median longitudinal stripe of brown somewhat deeper in tint than the transverse bars on the upper parts; the anal region is plain, more ochraceous, white; the legs have numerous, but rather faint, transverse spots of brown. Ground-color of the wings and tail brown, like the bars of the back; middle and secondary wing-coverts with roundish transverse spots of nearly pure white on lower webs; lesser coverts plain rich brown; secondaries crossed by six bands of pale grayish brown, passing into paler on the edge of each feather; primary coverts with four bands of darker ochraceous brown; primaries with transverse series of quadrate pale brown spots on the outer webs (growing deeper in tint on inner quills); on the longest are about eight. Tail, like the wings, crossed with six or seven sharply defined bands of pale brown, the last terminal. Face grayish white with concentric semicircular bars of brown; eyebrows and lores with black shafts; a narrow crescent of black against anterior angle of the eye. Facial circle of blackish brown and creamy white bars, the former prevailing along the anterior edge, the latter more distinct posteriorly and prevailing across the neck in front, where the brown forms disconnected transverse spots. Bill deep wax- or dull chrome-yellow; iris brownish black, the pupil appearing dull blue by contrast; scutellæ of toes dull wax-yellow or grayish yellow; soles of toes deep dull chrome-yellow; claws black, or dark horn-color tipped with black.

Total length, 19.50-22.00 inches; extent, .44-.48; wing, 13.00-15.00; tail, about 9.00-10.00.

This is by far the most numerous species of owl in wooded portions of the State. It is familiarly known as the "Hoot Owl" on account of its well-known loud hooting call, generally interpreted as "who—who, who, who—who, who, who, ar-r-r-e, you?" although sometimes translated as "who cooks for you all?" This call is far louder than the deeper bass hooting of the Great Horned Owl, and is also more varied. Frequently it is preceded by a very loud, "blood-curdling" shriek, causing the hair of the uninitiated to rise on his

...ly is boisterously hilarious for a solitude of night again reigns supreme.

The Barred Owl is less strictly nocturnal. Owl, Long-eared Owl, or Little Screech Owl flying about during dark or cloudy weather; often be heard in bright sunny days, and in the day of the bird's destruction, as perhaps no bird by a good imitation of its note,—and that one susceptible of very exact imitation.

GENUS **SCOTIAPTEX** SWA

Scotiaptex SWAINS. Classif. B. ii, 1837, 217. Type *Strix c.*

GEN. CHAR. Size large, although the body is very small of the wing and tail. Head without ear-tufts. Six outer quaternaries. Toes completely and densely covered by long hair-like

Scotlaptex cinereum (Gm

GREAT GRAY OWL.

Popular synonyms. Great Cinereous Owl; Great Sooty Owl.

Strix cinerea GMEL. S. N. i, pt. i, 1788, 291.—SW. & RICH. F. B. Man. i, 1832, 128.—AUD. Orn. Biog. iv, 1838, 364, pl. 351.—No. 474.

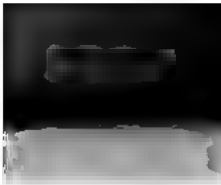
Uluia cinerea BP. Consp. i, 1850, 53 (part).—RIDGW. Nom. N.

Syrnium cinereum BP. 1838.—AUD. Synop. 1839, 26; B. AND BALD'S B. N. Am. 1858, 56.—BALD, Cat. N. Am. B. 1859, 1873, App. p. 131; B. N. W. 1874, 307 (b. *cinereum*).

Syrnium lapponicum var. *cinereum* COUES, Key, 1872, 204; *Syrnium* (*Scotiaptex*) *cinereum* B. B. & R. Hist. N. Am. B.

HAB. Northern North America, south, in winter, to north Massachusetts, Rhode Island, northern New York, northern breeding as far south as Canada ("Oölonis" — 1860).

SP. CH.



are most variegated by the white mottling. The alula and primary coverts have very indistinct bands of paler; the secondaries are crossed by nine bands (last terminal, and three concealed by coverts) of pale grayish brown, inclining to white at the borders of the spots; primaries crossed by nine transverse series of quadrate spots of mottled pale brownish gray on the outer webs, those beyond the emargination obscure,—the terminal crescentic bar distinct, however; upper secondaries and middle tail-feathers with coarse transverse mottling, almost forming bars. Tail with about nine paler bands, these merely marked off by parallel, nearly white bars, enclosing a plain grayish brown, sometimes slightly mottled, space, just perceptibly darker than the ground-color; basally the feathers become profusely mottled, so that the bands are confused; the last band is terminal. Beneath, the ground-color is grayish white, each feather of the neck, breast, and abdomen with a broad, longitudinal ragged stripe of dark brown, like the ground-color of the upper parts; sides, flanks, crissum, and lower tail-coverts with regular transverse narrow bands; legs with finer, more irregular, transverse bars of dusky. "Eyebrows," lores and chin grayish white, a dusky space at anterior angle of the eye; face grayish white, with distinct concentric semicircles of blackish brown; facial circle dark brown, becoming white across the foreneck, where it is divided medially by a spot of brownish black, covering the throat.

Wing, 16.00-18.00; tail, 11.00-13.00; culmen, 1.00; tarsus, 2.30; middle toe, 1.50.

The Old World form of this species (*cinereum lapponicum*) is much paler in coloration, the lighter markings predominating. The under side of the primaries shows a conspicuous patch of whitish, covering the basal portion of these feathers, this patch, being much reduced in size or altogether wanting in the American race.

The Great Gray Owl is a northern bird of very rare or accidental occurrence in Illinois. It is given by Mr. Nelson (p. 117 of his list) as a very rare winter visitant to Cook county, but outside of this record we have no knowledge of its having been taken or observed anywhere in the State.

GENUS *NYCTALA* BREHM.

Nyctala BREHM, Isis, 1838, 1271. Type, *Strix tengna'mi* Gmel.

GEN. CHAR. Size small. Head very large, without ear-tufts; eyes moderate; iris yellow. Two outer primaries with their inner webs distinctly emarginated. Tarsi and toes densely, but closely feathered. Ear-conch very large, nearly as high as the skull, with an anterior operculum; the two ears exceedingly asymmetrical, not only externally but in their osteological structure. Furcula not ankylosed posteriorly, but joined by a membrane.

The North American species of this genus are two in number, and may readily be distinguished from one another by the characters given in the following comparative diagnosis. One of them

one, the ground color, however, so mottled with grayish, and the pale bands with dusky, that the bars by no means sharply defined or conspicuous, though they are very regular; alula and primary coverts more sharply barred with cream-colored spots, those on the former nearly white; primaries with broad quadrate spots of creamy white on outer webs, those extending from seven to eight transverse bands, the last of which is not terminal. Tail more irregularly mottled than the wings, and crossed by seven to eight narrow, indistinct, but continuous pale bands. Eyebrows white, the feathers bordered with dusky; cheeks, ear-coverts, and lower throat dull white, with transverse bars of blackish; chin immixt; upper eyelid dark brown; facial circle black; neck and jugulum like the cheeks, but more strongly barred, and with blackish along the shaft. Ground-color of the lower parts white, each feather with a median stripe of black, this throwing off distinct bars to the edge of the feathers; the median black is largest on sides of the breast where it expands into very large conspicuous spots, having a slight rusty exterior suffusion; the abdomen medially, the anal region, and the lower tail-coverts are almost unvaried white. Tibia and tarsi dull white, much barred transversely with blackish, or pale ochraceous, more sparsely barred with dark brownish. Lining of the wing creamy white, varied only along the edge; light bars on under surface of primaries very indistinct.

b. Rufescent plumage.

Adult. General pattern of the preceding, but the grayish tints replaced by lateritious rufous, very fine and bright, often with a slight vinaceous cast; this is often uniform, showing no trace of the transverse dark mottling; there are, however, black shaft-lines to the feathers (these most conspicuous on the head above, and scapulars, and narrower and more sharply defined than in the gray plumage). The inner webs of the ear-tufts, outer webs of scapulars, and lower secondary and middle wing-coverts, are white, as in the gray plumage; those of the scapulars are also bordered with black. The secondaries, primaries, and tail are less bright rufous than the other portions, the markings as in the gray plumage, only the colors being different. The upper eyelid, and, in fact, all around the eye, fine light rufous; cheeks and ear-coverts paler, scarcely variegated. Lower parts without the transverse bars of the gray plumage, but in their place an irregular clouding of fine light rufous, like the back; the lower parts medially (very broadly) immaculate snowy white; most of the feathers having the red spotting show black shaft-strips, but the pectoral spots are not nearly so large or conspicuous as in the gray bird. Tibia fine pale ochraceous rufous; tarsi the same posteriorly, in front white with

The fact that in eastern North America this species is dichromatic, while in most parts of the West it presents a single phase of plumage—the gray—is one of the most interesting problems in North American ornithology. Scarcely less curious is the fact that in different portions of the Eastern Province the two phases vary in relative abundance. For example, during several years' close observation of birds in the vicinity of Mount Carmel, Illinois, I saw but a single specimen in the gray plumage, while the number of "red" specimens must have exceeded fifty. In the vicinity of Washington, D. C., the proportion of the two phases is more nearly equal, although the rufous style is perhaps the more common. In the neighborhood of Cincinnati, Ohio, about the same proportion obtains, according to Dr. F. W. Langdon, who, in the *Journal of the Cincinnati Society of Natural History* (Vol. V., pp. 52, 53), states that of 56 specimens actually examined, 32 were rufous and 24 were gray.

The Screech Owl (as this species is almost universally known), is, with the possible exception of the Barred Owl, much the most abundant species of the family in Illinois, and is a constant resident wherever found.

We quote the following account of its habits, by Dr. T. M. Brewer, from *History of North American Birds*, Vol. III., pp. 56, 57:

"The Mottled Owl is nocturnal in its habits, never appearing abroad in the daylight except when driven out by the attacks of hostile birds that have discovered it in its retreat. Its eyes cannot endure the light, and it experiences great inconvenience from such an exposure. During the day it hides in hollow trees, in dark recesses in the forests, or in dark corners of barns, and comes out from its retreat just before dark. During the night it utters a very peculiar wailing cry, not unlike the half-whining, half-barking complaints of a young puppy, alternating from high to low, intermingled with deep guttural trills. These cries, which are sometimes prolonged until after midnight, usually elicit an answer from its mate or companions, and would seem to be uttered as a call soliciting a reply from some lost associate. Their flight is noiseless and gliding, and they move in a manner so nearly silent as to be hardly perceptible. They are excellent mousers, and swallow their food whole, ejecting the indigestible parts, such as hair, bones, feathers, etc."

ing the ocellus on the tibia and tarsal; sides of the breast like the back, but of a more reddish or burnt-senna tint; sides and flanks with longitudinal daws of the same; chest, abdomen, lower tail-coverts, tarsal, and tibia, immaculate. Wing formula, 4-3-5-1-3. Wing, 5.49; tail, 2.80; culmen, .76; tarsus, .86; middle toe, .60.

Seven specimens before me vary in length of wing from 5.25 to 5.80; tail 2.60 to 3.00 (female). The largest specimen is 12,053 (female, Fort Tejon, California: J. Xantus). This differs from the specimen described, in whiter face, more conspicuous white streaks on forehead, smaller, less numerous, red spots below, and in having a fourth white band on the tail; this, however, is very inconspicuous. There are no authentic males before me, though only two are marked as females; the extremes of the series probably represent the sexual discrepancy in size.

Young male. No. 12,814. Racine, Wisconsin, July, 1858; Dr. P. B. Hoy: Upper surface continuous plain dark sepia-olive; face darker, approaching sooty blackish, perfectly uniform; around the edge of the forehead, a few shaft-lines of white; scapulars with a concealed spot of pale ochraceous on lower webs; lower feathers of wing-coverts with a few white spots; outer feather of the alula scalloped with white; primary coverts perfectly plain; five outer primaries with white spots on outer webs, these diminishing toward the end of the feathers, leaving only two or three series well defined; tail darker than the wings, with three narrow bands composed of white spots, these not touching the shaft on either web. "Eyebrows" immaculate white, lores more dusky; face and eyelids dark sooty brown; sides of the chin white. Throat and whole breast like the back, but the latter paler medially, becoming here more fulvous; rest of the lower parts plain fulvous ochraceous, growing gradually paler posteriorly. Lining of the wing plain dull white; under surface of primaries with dusky prevailing, but this crossed by bands of large whitish spots; the three outer feathers, however, present a nearly uniform dusky aspect, being varied only basally. Wing formula, 3, 4-2-5-6-7, 1. Wing, 5.50; tail, 2.80; culmen, .45; tarsus, .80; middle toe, .65.

This handsome little bird is not an uncommon resident of the

GENUS **MEGASCOPS** KAUP.

Scops SAVIGN. Desc. de l'Égypte, 1809, 291. Type, *Strix scops* LINN. (Nec BRUNN. 1772.)
Megascops KAUP, Isis, 1848, 765. Type, *Strix asio* LINN.

GEN. CHAR. Small owls with distinct ear-tufts, the tarsus more or less feathered (usually completely feathered) the wings ample (more than twice the length of the short, slightly rounded tail), the plumage exceedingly variegated with vermiculations, cross-bars, and mottlings; toes naked or bristled—never completely feathered, except toward the base.

The above brief diagnosis is sufficient to characterize this group. In general aspect the species of this genus are miniatures of those which belong to the genus *Bubo*, and are perhaps as nearly related structurally to the latter as to any other members of the family.

All the American species have the outer webs of the scapulars mostly light-colored (generally white, with a blackish terminal border—rusty ochraceous in *flammeolus* and the darker forms of *brasilianus*), producing a more or less distinct stripe along each side of the dorsal region; the feathers of the upper and lower parts usually have blackish shaft-streaks, those beneath generally with narrow transverse bars; outer webs of the remiges with light-colored spots, and the tail more or less (never sharply) banded. Nearly all the species are, in some part of their range, dichromatic, having a bright rufous phase, quite different from the "normal" grayish plumage.

Megascops asio (Linn.)

SCREECH OWL.

Popular synonyms. Little Mottled Owl; Little Red Owl.

Strix asio LINN. S. N. ed. 12, i, 1766, 132.—WILS. Am. Orn. v, 1812, 83, pl. 42, fig. 1.—AUD. Orn. Biog. i, 1832, 486; v, 1839, 392, pl. 97.—NUTT. Man. i, 1832, 120.

Scops asio BP. 1838.—CASS. in Baird's B. N. Am. 1858, 51.—BAIRD, Cat. N. Am. B. 1859, No. 49.—COUES, Key, 1872, 202; Check List, 1873, No. 318; 2d ed. 1882, No. 465; B. N. W. 1874, 303.—B. B. & R. Hist. N. Am. B. iii, 1874, 49.—RIDGW. Nom. N. Am. B. 1881, No. 402.

Bubo asio VIEILL. 1807.—AUD. Synop. 1839, 29; B. Am. i, 1840, 147, pl. 40.

Strix navia GMEL. S. N. i, pt. 1, 1788, 289.—WILS. Am. Orn. iii, 1812, 16, pl. 19, fig. 1.

HAB. Eastern United States and British Provinces, west to edge of the Great Plains. (In Florida replaced by *M. asio floridanus* and in southern Texas by *M. asio macalli*.)

a. Normal plumage.

SP. CHAR. Adult. Ground-color above brownish cinereous, palest on the head, purest ash on the wings, minutely mottled with fine zigzag transverse bars of black, each feather with a median ragged stripe of the same along the shaft. Inner webs of ear-tufts, outer webs of scapulars, and spots occupying most of the outer webs of the two or three lower feathers of the middle and secondary wing-coverts, white, forming (except on the first) conspicuous spots, those of the scapulars bordered with black. Secondaries crossed with about seven regular paler bands, each enclosing a more irregular dusky

one; the ground-color, however, so mottled with grayish, and the pale bands with dusky, that they are by no means sharply defined or conspicuous, though they are very regular; alula and primary coverts more sharply barred with cream-colored spots, those on the former nearly white; primaries with broad quadrate spots of creamy white on outer webs, these forming from seven to eight transverse bands, the last of which is not terminal. Tail more irregularly mottled than the wings, and crossed by seven to eight narrow, indistinct, but continuous pale bands. Eyebrows white, the feathers bordered with dusky; cheeks, ear-coverts, and lower throat dull white, with transverse bars of blackish; chin immaculate; upper eyelid dark brown; facial circle black; neck and jugulum like the cheeks, but more strongly barred, and with blackish along the shaft. Ground-color of the lower parts white, each feather with a median stripe of black, this throwing off distinct bars to the edge of the feathers; the median black is largest on sides of the breast, where it expands into very large conspicuous spots, having a slight rusty exterior suffusion; the abdomen medially, the anal region, and the lower tail-coverts are almost unvaried white. Tibiæ and tarsi dull white, much barred transversely with blackish, or pale ochraceous, more sparsely barred with dark brownish. Lining of the wing creamy white, varied only along the edge; light bars on under surface of primaries very indistinct.

b. Rufescent plumage.

Adult. General pattern of the preceding, but the grayish tints replaced by lateritious rufous, very fine and bright, often with a slight vinaceous cast; this is often uniform, showing no trace of the transverse dark mottling; there are, however, black shaft-lines to the feathers (these most conspicuous on the head above, and scapulars, and narrower and more sharply defined than in the gray plumage). The inner webs of the ear-tufts, outer webs of scapulars, and lower secondary and middle wing-coverts, are white, as in the gray plumage; those of the scapulars are also bordered with black. The secondaries, primaries, and tail are less bright rufous than the other portions, the markings as in the gray plumage, only the colors being different. The upper eyelid, and, in fact, all around the eye, fine light rufous; cheeks and ear-coverts paler, scarcely variegated. Lower parts without the transverse bars of the gray plumage, but in their place an irregular clouding of fine light rufous, like the back; the lower parts medially (very broadly) immaculate snowy white; most of the feathers having the red spotting show black shaft-stripes, but the pectoral spots are not nearly so large or conspicuous as in the gray bird. Tibiæ fine pale ochraceous rufous; tarsi the same posteriorly, in front white with cuneate specks of rufous; lower tail-coverts each with a median transversely cordate spot of dilute rufous, the shaft black. Lining of the wing with numerous rufous spots.

Young. Wings also lateritious ground-color not so uniform, and dusky as in the adult form.



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GENUS **BUBO** CUVIER.

Bubo Cuv. Reg. An. 1817, 331. Type, *Nixus bubo* Linn.

GEN. CHAR. Size varying from medium to very large; head with well-developed ear-tufts. Bill black; iris yellow, orange, or brown. Two or three outer quills with their inner webs emarginated. Third or fourth quill longest. Bill very robust, the lower mandible nearly truncated, and with a deep notch near the end; cere gradually ascending basally, not arched or nearly straight, not equal to the culmen. Tail short, a little more than half the wing, slightly rounded. Ear-conch small, simple, without operculum; the two ears symmetrical.

There is but one species of this genus, as restricted, in North America. This, however, varies so much with locality that several geographical races have been recognized, of which the following appear pretty well characterized:

- α. virginianus.* Dark colored, usually with much ochraceous or tawny, the dark markings broad and distinctly defined. *Hab.* Eastern North America, south to Costa Rica.
- β. subarcticus.* Light colored, with buff instead of ochraceous, the dark markings narrower and less distinct. *Hab.* Western United States and interior of British America; east, occasionally, to Wisconsin and Illinois, south to central and western Mexico.
- γ. saturatus.* Very dark colored, with the dark markings much broader than in *virginianus*. *Hab.* Northwest coast, from northern California to Sitka; Labrador.
- δ. arcticus.* Very light colored, the prevailing aspect white, the dark markings very much reduced in extent. *Hab.* Interior of Arctic America.

These races are very strongly characterized in a majority of specimens from any typical locality, but there is a very great amount of individual variation in each. Only two of them (*virginianus* and *subarcticus*) are known to occur in Illinois.

HAB. Eastern North America, west to edge of Great Plains, south through eastern Mexico to Costa Rica.

SP. CHAR. *Adult male* (No. 12,057, Philadelphia: C. Drexler). Bases of all the feathers yellowish rufous, this partially exposed on the head above and nape, along the scapulars on the rump, and sides of the breast. On the upper surface this is overlaid by a rather coarse transverse mottling of brownish black upon a white ground, the former rather predominating, particularly on the head and neck, where it forms broad ragged longitudinal stripes (almost obliterating the transverse bars), becoming prevalent, or blended anteriorly. The lowermost scapulars, and some of the lower feathers of the middle and secondary wing-coverts, with inconspicuous transverse spots of white. On the secondaries the mottling is finer, giving a grayish aspect, and crossed with eight sharply defined, but inconspicuous, bands of mottled dusky; primary coverts with the ground color very dark, and crossed with three or four bands of plain blackish, the last terminal though fainter than the rest; ground-color of the primaries more yellowish, the mottling more delicate; they are crossed by nine transverse series of quadrate dusky spots. The ground-color of the tail is pale ochraceous (transversely mottled with dusky), becoming white at the tip, crossed by seven bands of mottled blackish, these about equaling the light bands in width; on the middle feathers the bands are broken and confused running obliquely, or in places longitudinally. Outer webs of ear-tufts pure black, inner webs almost wholly ochraceous; eyebrows and lores white, the feathers with black shafts; face dingy rufous; eye very narrowly encircled with whitish; a crescent of black bordering the upper eyelid, and confluent with the black of the ear-tufts. Facial circle continuous black, except across the foreneck; chin, throat and jugulum pure immaculate white, to the roots of the feathers. Beneath, white prevails, but the yellowish rufous is prevalent on the sides of the breast, and shows as the base color wherever the feathers are disarranged. The sides of the breast, sides, and flanks have numerous sharply defined narrow transverse bars of brownish black; anteriorly these are finer and more ragged, coalescing so as to form conspicuous, somewhat longitudinal, black spots. On the lower tail-coverts the bars are distant, though not less sharply defined. The abdomen, medially, is scarcely maculate white. Legs and toes plain ochraceous white.

Wing formula, 2,3-4-1,5. Wing, 14.50; tail, 8.20; culmen, 1.10; tarsus, 2.00; middle toe, 2.00.

Female (No. 12,065, Maryland: R. J. Pollard): General appearance same as the male. Black blotches on head, above, and nape less conspicuous, the surface being mottled like the back, etc.; primary coverts with three well-defined narrow pure black bands; primaries with only six bands, these broader than in the male; secondaries with only five bands; tail with but six dark bands, these very much narrower than the light ones. Tibiæ and tarsi with sparse transverse bars of dusky.

Wing formula, 3,2,4-1=5. Wing, 16.00; tail, 9.00; culmen, 1.20; tarsus, 2.20; middle toe, 2.10.

Young (No. 12,062, Washington, D. C., May 20, 1859: C. Drexler): Wings and tail as in adult. Downy plumage of head and body ochraceous, with detached, rather distinct, transverse bars of dusky.

Although much less numerous than the Barred Owl, this powerful and destructive species is much more plentiful than the farmer or poultry raiser desires. As Dr. Brewer truly remarks (*Hist. N. Am. B.* Vol. III., p. 68), "It is one of the most destructive of the depredators upon the poultry-yard, far surpassing in this respect any of our hawks. All its mischief is done at night, when it is almost impossible to detect and punish it. Whole plantations are often thus stripped in a single season.

"Its flight is rapid and graceful, and more like that of an eagle than one of this family. It sails easily and in large circles. It is nocturnal in its habits, and is very rarely seen abroad in the day, and then only in cloudy weather or late in the afternoon. When detected in its hiding-place by the Jay, Crow, or Kingbird, and driven forth by their annoyances, it labors under great disadvantages, and flies at random in a hesitating flight, until twilight enables it to retaliate upon its tormentors. The hooting and nocturnal cries of the Great Horned Owl are a remarkable feature in its habits. These are chiefly during its breeding season, especially the peculiar loud and vociferous cries known as its hooting. At times it will utter a single shriek, sounding like the yell of some unearthly being, while again it barks incessantly like a dog, and the resemblance is so natural as to provoke a rejoinder from its canine prototype. Occasionally it utters sounds resembling the half-choking cries of a person nearly strangled, and, attracted by the watchfire of a camp, flies over it, shrieking a cry resembling *waugh-h-o-o*. It is not surprising that with all these combinations and variations of unearthly cries, these birds should have been held in awe by the aborigines, their cries being sufficiently fearful to startle even the least timid.

"The mating of this bird appears to have little or no reference to the season. A pair has been known to select a site for their nest, and begin to construct a new one, or seize upon that of a Red-tailed Hawk, and repair it, in September or October, keeping in its vicinity through the winter, and making their presence known by their continued hooting. Mr. Jillson found a female sitting on two eggs in February, in Hudson, Mass.; and Mr. William Street,

Bubo virginianus subarcticus (Hoy).**WESTERN HORNED OWL.**

Bubo subarcticus Hox, Proc. Phila. Acad. vi. 1852, 211 (Wisconsin).

Bubo virginianus subarcticus RIDG. Nom. N. Am. B. 1881, No. 405a.

Bubo virginianus var. *arcticus* (part) COUES, Key, 1872, 202; Check List, 1873, No. 317a.—

B. B. & R. Hist. N. Am. B. i, 1874, 60, 64. [Not *Strix* (*Bubo*) *arcticus* Sw. & Rich.]

Bubo virginianus c. *arcticus* COUES, B. N. W. 1874, 301 (excl. syn. pt.).

Bubo virginianus var. *pacificus* (part) Cass. Illustr. 1854, 178; in Baird's B. N. Am. 1858, 49.

Bubo virginianus AUCT. (all citations from western United States, and western and central Mexico).

HAB. Western United States, interior districts of British America, and table lands of Mexico. (Replaced in western Oregon and Washington Territory, and northern coast region of California, by the very dark-colored *B. virginianus saturatus* RIDG.)

SP. CHAR. Pattern of coloration precisely like that of var. *virginianus*, but the general aspect much lighter and more grayish, caused by a greater prevalence of the lighter tints, and contraction of dark pencilings. The ochraceous much lighter and less rufous. Face soiled white instead of deep dingy rufous.

Male (No. 21,581, Camp Kootenay, Washington Territory, August 2, 1860): Wing, 14.00; tail, 8.60; culmen, 1.10; tarsus, 2.00. Tail and primaries each with the dark bands, nine in number; legs and feet immaculate white. Wing formula, 3, 2-4-5-1.

Female (No. 10,574, Fort Tejon, California): Wing, 14.70; tail, 9.50; culmen, 1.10; tarsus, 2.10; middle toe, 2.00. Tail and primaries each with seven dark bands; legs transversely barred with dusky. Wing formula, 3, 4, 2-5-1, 6.

The above description covers the average characters of a light grayish race of the *B. virginianus*, which represents the other styles in the whole of the western and interior regions of the continent. Farther northward in the interior of the fur countries, the plumage becomes lighter still, some Arctic specimens being almost as white as the Snowy Owl.

The paler-colored race of the Great Horned Owl, like other western and northern birds, sometimes strays to Illinois during its winter migrations. There is a specimen from Pekin, Tazewell Co., in the Museum of Comparative Zoölogy at Cambridge, Mass., which the writer had the opportunity of examining in 1872. Its habits are of course essentially, if not exactly, the same as those of the typical form.

GENUS *NYCTEA* STEPHENS.

Nyctea STEPHENS, Shaw's Gen. Zool. xiii, pt. ii, 1826, 68. Type, *Strix ermenia* SHAW, = *N. scandiaca* LINN.

GEN. CHAR. Size very large, the head comparatively small, and without obvious ear-tufts. Loral feathers very long, almost concealing the bill, and hair-like feathers of the toes nearly hiding the claws. Lower tail-coverts extending quite to the tip of the tail. Color of adults pure white, relieved by more or less numerous bars of slate-color.

The genus *Nyctea* is closely related to *Bubo*, and has been united with the latter as a subgenus. They seem to be sufficiently distinct, however, as the following differential characters may serve to show:

Bubo. Two to three outer quills with their inner webs emarginated. Ear-tufts well developed; loral feathers not hiding the bill, and the claws and terminal scutellæ of the toes exposed. Lower tail-coverts not reaching the end of the tail.

Nyctea. Four outer quills with their inner webs emarginated. Ear-tufts rudimentary; loral feathers hiding the bill, and claws and entire toes concealed by long hair-like feathers. Lower tail-coverts reaching to the end of the tail.

Nyctea nyctea (Linn.)

SNOWY OWL.

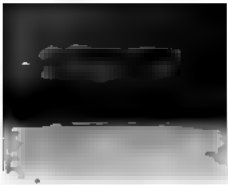
Popular synonyms. Great White Owl; Snow Owl; Ermine Owl.

Strix nyctea LINN. S. N. ed. 10, i, 1758, 93.—WILS. Am. Orn. iv, 1812, 53, pl. 32, fig. 1.—SW. & RICH. F. B.—A. II, 1831, 88.—NUTT. Man. i, 1832, 116.—AUD. Orn. Biog. iv, 1834, 135; v, 1839, pl. 121.

Surnia nyctea SELBY, 1833.—AUD. Synop. 1839, 21; B. Am. i, 1840, 113, pl. 28.

Strix scandiaca LINN. S. N. ed. 12, i, 1766, 132.

Nyctea scandiaca NEWT. ed. Yarrell's Hist. Brit. B. ed. 4, iii, 1872, 187.—B. B. & R. Hist. N. Am. B. iii, 1874, 61 (var. *scandiaca*).—RIDGW. Nom. N. Am. B. 1881, No. 406.—COUES, B. N. W. 1874, 309; 2d Check List, 1882, No. 479.



those of the upper surface more crescentic, those on the lower tail-coverts, narrower, and more distant. Tail crossed by five bands, composed of detached transverse spots. Only the face, foreneck, middle of the breast, and feet, are immaculate; everywhere else, excepting on the crissum, the dusky and white are in nearly equal amount. Wing, 18.00; tail, 9.80; culmen, 1.10. Wing formula, 3=4, 2-1=5.

Young (No. 36,434, Arctic America, August, 1863; MacFarlane): Only partially feathered. Wings and tail as in the adult female described, but the blackish bars rather broader. Down covering the head and body brownish or sooty slate, becoming paler on the legs.

It is only at irregular intervals, and usually during very severe winters, that this arctic species becomes common in the United States. Such a winter was that of 1876-77, when the Snowy Owl was really abundant along the Atlantic seaboard, as far south as Washington at least, and probably much farther.

GENUS *SURNIA* DUMERIL.

Surnia DUMERIL. Zool. Anal. 1806, 34. Type, *Strix ulula* LINN.

GEN. CHAR. Size medium; form elongated, and general aspect hawk-like. No ear-tufts. Four outer quills with their inner webs sinuated, the third longest; tail nearly as long as the wing, graduated. Ear-conch small, simple, oval. Bill strong, yellow. Eyes small, the iris yellow. Tarsi and toes thickly covered with soft, dense feathers; tarsus shorter than the middle toe. Plumage much more compact and less downy, and remiges and rectrices stiffer and straighter, than in other owls.

The single species of this genus belongs exclusively to the cold-temperate and arctic zones of the Northern Hemisphere, and is circumpolar. Though somewhat hawk-like in its appearance, it is nevertheless a true Owl, and possesses no affinities of structure with the Hawks, any more than other species of *Strigidae*.

The two races of *S. ulula* may be distinguished as follows:

COMMON CHARACTERS. Above dark vandyke-brown, the head above dotted with white, and the scapulars spotted with the same. Beneath transversely barred with vandyke-brown and white, the bars regular, continuous, and sharply defined. Head and neck with two lateral, and one posterior median, stripes of brownish black, the space between them with white prevailing. Bill and iris yellow. Wing about 9.00; tail, 6.80-7.00.

α. ulula. White spotting prevailing. *Hab.* Palearctic Region; occasional in western Alaska.

β. caparoch. Brown spotting prevailing. *Hab.* Nearctic Region.

Surnia ulula caparoch* (Müll.)*AMERICAN HAWK OWL.**

Popular synonym. Hudsonian Hawk Owl, or Day Owl.

Strix funerea LINN. S. N. ed. 12, l. 1766, 133 (part, but not of 1766).—SW. & RICH. F. B.—A. II, 1831, 92.—NUTT. Man. I, 1832, 115.—AUD. Orn. Biog. iv, 1834, 360, pl. 378.

Surnia funerea BP. 1838.—AUD. Synop. 1839, 21; B. Am. I, 1840, 112, pl. 27.—RIDG. Nom. N. Am. B. 1881, No. 407.—COVEY, 2d Check List, 1862, No. 480.

Strix caparoch P. MT. MULLER, Suppl. S. N. 1779, 60.

Surnia ulula caparoch STEJNEGER, The Auk, 1884, 363.

Strix hudsonia GIMEL. S. N. I, pt. I, 1798, 295.—WILS. Am. Orn. vi, 1812, 64, pl. 60, fig. 6.

Surnia ulula var. *hudsonia* COVEY, Key, 1872, 306; Check List, 1874, No. 326; B. N. W. 1874, 311.—B. & R. Hist. N. Am. B. III, 1874, 75.

Surnia ulula (LINN.) CARR in Baird's B. N. Am. 1858, 64.—BAIRD, Cat. N. Am. B. 1859, No. 62.

HAB. Northern North America, south in winter to northern border of United States (Dakota, Montana, Minnesota, northern Illinois, Massachusetts, etc.).

SP. CHAR. *Adult.* Above rich dark vandyke-brown, darker anteriorly, less intense and more grayish on tail. A narrow streak of brownish black originating over the middle of eye, and extending backward above the upper edge of the ear-coverts, where it forms an elbow passing downward in a broad stripe over the ends of the ear-coverts; confluent with this, at about the middle of the vertical stripe, is another of similar tint, which passes more broadly down the side of the nape; between the last stripes (those of opposite sides) is another or median one of less pure black, extending from the occiput down the nape. Every feather of the forehead, crown, and occiput with a central ovate dot of white; those anterior more circular, on the occiput less numerous and more linear. Between the lateral and posterior nuchal stripes the white prevails, the brown forming irregular terminal and transverse or median spots; these grow more linear toward the back. Interscapulars plain; posterior scapulars variegated with partially concealed large transverse spots of white, the lower feathers with nearly the whole outer webs white, their confluence causing a conspicuous elongated patch above the wing. Rump with sparse, irregular, but generally transverse, spots of white; upper tail-coverts with broader, more irregular bars of the same, these about equal to the brown in width. Lower feathers of the middle and secondary wing-coverts each with an ovoid spot of white on the outer web; secondaries crossed by about three transverse series of longitudinally ovoid white spots (situated on the edge of the feather), and very narrowly

The whole lining of the wing is barred like the sides. The dark brown prevails on the under surface of the primaries, etc.; the former having transverse, irregular, elliptical spots of white, these touching neither the shaft nor the edge; on the longest quill are seven of these spots; on all they are anterior to the emargination.

Male (No. 49,908, Nulato, Alaska, April 21, 1867; W. H. Dall): Wing formula, 3, 4-2, 5-6-1. Wing, 9.00; tail, 7.00; culmen, .70; tarsus, (of another specimen; wanting in the present), .90; middle toe, .82.

Female (No. 49,807, Nulato, April 20; W. H. Dall): Wing formula, 3, 4-2-5-6-7-1. Wing, 9.00; tail, 6.80; culmen, .70; middle toe, .80.

There is only one valid record known to me of the occurrence of this northern species in Illinois, viz., that by Mr. Nelson in his list of the birds of the northeastern portion of the State (*Bull. Essex Inst.* Vol. VIII., 1876, p. 117), where its capture in Kane county, by Dr. J. W. Velie, the first of September, 1869, is noted.

SUBORDER FALCONES.—DIURNAL RAPTORES.

FAMILY FALCONIDÆ.—FALCONS, KITES, HARRIERS, HAWKS, AND EAGLES.

CHAR. Eyes directed laterally, and eyelids provided with lashes. Toes invariably naked, and tarsus usually naked and scutellate (feathered only in *Aquila* and *Archibuteo*). Outer toe not reversible (except in *Pandion*). Head never with ear-tufts, and never wholly naked (except in the *Fulturinae*, of the Old World).

The above characters are about the only readily observable points in the external anatomy in which the *Falcones* differ strikingly from the *Striges* and *Sarcorhamphi*, and may serve to distinguish the birds of this family from those of the two others. The osteological characters, however, are more decided and important from a taxonomic point of view, and serve to separate the Diurnal Raptores as a well-defined suborder.

The number of subfamilies into which the family is divisible is an open question. In North America, however, the following may be distinguished:

- A. Nasal bones almost completely ossified, the nostril being a small orifice, with

I am not fully satisfied of the advisability of according *Pandion* the rank of a family but am rather inclined to look upon it as constituting a subfamily of a family *Buteonidæ*. The reversible toe and the peculiarly compact plumage, which are apparently its most marked characters, are certainly teleological modifications, fitting it perfectly for its piscatorial habits. In other characters, both anatomical and external, it exhibits numerous points of analogy, if not relationship, to the genera *Elanoides* and *Elanus*, and it seems to me should be placed at least as near to these forms as they are to any of the Buteonine genera.

SUBFAMILY FALCONINÆ.

CHAB. (See page 426.)

The Falconinæ, as here recognized, include not only the true Falcons (*Falconeæ*), but also three other groups, each of which is peculiar to Middle and South America. They may be distinguished as follows:

- A.** Posterior toe abbreviated, very much shorter than the lateral pair; tarsi and toes covered with small hexagonal scales, larger in front.
 - a.** Nostrils a small, round, or oblique opening, with a bony-rimmed margin and central tubercle.
 - 1. Superior tomium with a conspicuous tooth, and inferior tomium with a corresponding notch. Superciliary process of the lachrymal elongated, narrow, reaching nearly across the orbit. Posterior margin of the sternum nearly even, with a pair of large oval foramina. One or two outer primaries with inner webs emarginated near their tips. *Falconeæ*.
 - 2. Tomia without tooth or notch. Superciliary process of the lachrymal abbreviated, reaching only half-way across the orbit. Posterior margin of the sternum with a pair of deep indentations. Three or more outer primaries situated near the middle portion *Polyboreæ*.
 - b.** Nostrils a large opening without bony-rimmed margin or central tubercle.
 - 3. Superciliary process of the lachrymal elongated, broad, extending nearly across the orbit. Tomia without tooth or notch. Posterior margin of the sternum as in *Falconeæ*. Four or more outer primaries with inner webs situated near the middle portion *Micratureæ*.
- B.** Posterior toe elongated, almost equal to the lateral pair. Tarsi and toes covered uniformly with thick, rough, imbricated scales.
 - 4. Tomia without tooth or notch. Nostrils as in *Falconeæ* and *Polyboreæ*. Superciliary process of the lachrymal elongated, very broad, reaching nearly across the orbit. Posterior margin of the sternum nearly even, entire, and without foramina. Primaries as in *Polyboreæ* and *Micratureæ* *Herpetotherææ*.

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Female (No. 59,063, U. S. Nat. Mus., Wahsatch Mts., Utah May 23 1894): Above cinereous-drab, becoming gradually paler and more bluish indistinctly, everywhere with a more dusky tint, the shafts of all b; anteriorly the darker shade predominates while posteriorly the the anterior portions the light bars are much restricted in width. Tarsus very pale, ashy drab, narrowly tipped with pale rusty on the middle pair; the concealed portions of the shaft show obsolete or faint traces of darker bars which on the are about eleven in number. On the inner webs the paler bars are the darker ones, and in line to a distance as a tint, the lateral externally with this color. Primaries plain ashy drab, with a hoary dusky darker terminally, and with a slightly paler apical margin. Secondary stripe (somewhat interrupted) above, the two stripes confluent across the occiput, a broad heavy blackish brown, with conspicuous shaft-streaks of black. Lores and rictus black downward and obliquely backwards across the posterior stripe, like the crown. Beneath continuous white with orange on the abdomen and crissum; abdomen and sides of the breast small, ovate spots of vandyke-brown, sides transversely spotted with the spots condensed into a broken patch on the flanks, outside of reverse spots of the same. Axillars plain clear vandyke-brown, with a few rusty specks near their ends. Lining of the wing clear white, the spaces of dusky brown, which toward the edge become aggregated into a patch; inner webs of the primaries with broad transverse spots of nearly to the shaft; they are about thirteen in number on the longest base of the bill tinged with the same. Wing, 12 6/8; tail, 7 3/8; tarsus, 4 1/8.

(No. 18,554, Fort Buchanan, New Mexico, Dr. Irwin). Above continuous, becoming gradually lighter posteriorly, the tail being pale drab; except a few concealed ones on back and secondaries, but all the feathers edged with paler rusty brown, these edgings on upper tail-coverts

11.80; tail, 7.50; culmen, .75; tarsus, 2.15; middle toe, 1.65. Cere, base of both mandibles, eyebrow, bare orbital region, tarsi and toes, clear yellow.

Adult (?) females. A female obtained by Captain Bendire at Camp Harney, Oregon, measured, when fresh, 18.50 inches in length; wing, 13.25; tail, 8.00; weight 4 lbs. 12 oz. "Base of bill and cere sky-blue; tarsi and toes light greenish yellow."

Young males. A young male obtained by me November 29, 1867, at Carson City, Nevada, measured as follows before being skinned: Total length, 17 inches; extent, 37.75; wing, 12.25; tail, 7.50; weight only 1½ lbs. Bill, very fine bluish white, shading terminally into bluish slate, the point black; cere, rictus, and bare orbital region, greenish white; iris, vivid vandyke-brown; tarsi and toes pale yellowish, with a tinge of verdigris-green.

This fine falcon is a mere straggler to Illinois, having been observed on but few occasions. A specimen was obtained at Rock Island, by Mr. I. D. Sargent, of Philadelphia, and by him presented to the Academy of Natural Sciences in that city, while it has been observed on two occasions by the writer, once near Mount Carmel and once in Lawrence county (near the town of Bridgeport), both during the month of September, 1871.

SUBGENUS *Rhynchodon* NITZSCH.

Rhynchodon NITZSCH, Pterylog. 1840, 7, 8. Type, *Falco peregrinus* LATH.

The essential characters of this subgenus having been given on page 428, there is no necessity for their repetition here. There is but one species in North America, the circumpolar *F. peregrinus*, or Peregrine Falcon.

Falco peregrinus anatum (Bonap.)

DUCK HAWK.

Popular synonyms. American Peregrine; Great-footed Falcon; Black-capped Falcon.

Falco peregrinus WILS. Am. Orn. ix, 1814, 120, pl. 76.—NUTT. Man. i, 1832, 53.—AUD. Orn. Blog. i, 1832, 85; v, 1839, 365, pl. 16; Synop. 1839, 16; B. Am. i, 1840, 84, pl. 20.

Falco nœvius GMEL. S. N. i, pt. 1; 1788, 271.

Falco peregrinus nœvius RIDGW. Nom. N. Am. B. 1881, No. 414.

Falco anatum BONAP. Comp. List, 1838, 4.—CASS. in Baird's B. N. Am. 1858, 7.—BAIRD, Cat. N. Am. B. 1859, No. 5.

Falco communis var. *anatum* RIDGW. in B. B. & R. Hist. N. Am. B. iii, 1874, 128, 132.

Falco communis c. *anatum* COUES, B. N. W. 1874, 341.

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Aves. Proc. Phil. Acad. vi. 1853; 450; Illust. B. Cat. etc. 1854, 97; in Am. 1858 8; ed. 1860, pl. 11.—BAND. Cat. N. Am. B. 1859 No. 6. Gmel. Coues, Key, 1872, 213. Check List, 1874, No. 343.

America.

♂ male No. 43, 134, U. S. Nat. Mus., Fort Resolution, Brit. N. Am., June. Parts dark bluish plumbeous approaching black anteriorly, but on coverts becoming bluish plumbeous ash. On the head and neck black covers all the former except the chin and throat, and the latter; an invasion or indentation of the white of lower parts separates the black of the cheeks from that of the neck, throwing prominent angular patch; forehead and lorea grayish. All the feathers (the nape) with transverse bars of plumbeous black, these most anteriorly, where the plumbeous is lightest. Tail black, more plumbeously paler at the tip, and showing ten or eleven transverse narrow bars, these most distinct anteriorly; the bars are coloured on inner webs. Secondary coverts secondaries and primaries, uniform plumbeous-ash on terminal margin, most observable on secondaries and inner parts white, tinged with delicate cream-color, this deepest on the tibiae tinged with bluish. Chin, throat and jugulum immaculate; with faint longitudinal shaft streaks of black, sides, flanks and ed transversely with black, about four bars being on each feather; coverts they are narrower and more distant; on the abdomen the mark- of circular spots, anal region barred transversely. Lining of the under coverts white tinged with blue, and barred like the sides; maries slaty, with elliptical spots or bars of creamy white on inner longest. Wing formula, 3-1-3. Wing, 12.25, tail, 5.00; tarsus, 1.60; or, 1.40; inner, 1.20, posterior, .80; culmen, .80.

♀ No. 13, 377, Liberty Co., Georgia; Professor J. L. Leconte. Like the ♂, but tinge beneath deeper, no ashy wash, bands on the tail more out ten dark ones being indicated; outer surface of primaries and sides apparent; tail distinctly tipped with ochraceous white. The

It is extremely uncertain how many of the so-called "species" of Peregrine Falcon which pass current should be referred to *F. peregrinus* as geographical races, and it is equally doubtful how many of the latter should be recognized. I have yet to see a North American Peregrine which I could not distinguish readily from European examples, the chest being usually either immaculate or else very inconspicuously streaked in the American bird; but European writers say that they have inspected American specimens which had the breast as distinctly streaked as those from Europe. It is possible, however, that their remarks are based upon specimens of *F. pealei*, which has the chest so heavily marked as to be sometimes even spotted, and which differs so much from typical *peregrinus* that it may eventually prove to be a distinct species, though I am inclined to regard it as one of several geographical races of a widely distributed parent stock, to which I would also refer *F. cassini* Sharpe, of the southern extremity of South America.

In the adult plumage the principal variation is in the extent and disposition of the bars beneath. In most individuals they are regularly transverse only laterally and posteriorly, those on the belly being somewhat broken into more irregular cordate spots, though always transverse; in no American specimen that I have seen, are they as continuously transverse as in a male (No. 18,804) from Europe, which, however, in this respect, may form an exception to most European examples.

Very old males (as 49,790, Fort Yukon; 27,188, Moose Factory, (type of Elliott's figure of *F. peregrinus*, in Birds of America); and 42,997, Spanishtown, Jamaica) lack almost entirely the reddish tinge beneath, and have the posterior portions strongly tinged with blue.

The fact that this noble bird breeds in hollow trees in various parts of the Mississippi Valley is a comparatively recent discovery, being first announced by Col. N. S. Goss in the "Nuttall Bulletin" for January, 1878.

In the spring of 1878, the writer found several pairs nesting in sycamore trees in the neighborhood of Mt. Carmel. Three nests were found in the immediate vicinity of the town. All were placed in cavities in the top of very large sycamore trees, and were inaccessible. One of these trees was felled, however, and measurements with a tape-line showed the nest to have been eighty-

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th ground, its location being a shallow cavity, breaking off of the main limb, the upper part of over sufficiently to form a protection from the sun

SUBGENUS *Æsalon* KAUP.

For Thorow 1829, 40. Type *Falco æsalon* GMEL.

this subgenus may be distinguished by the follow-

1. *Æsalon* plumbeous blue above, the feathers with dusky edged with black, and tipped with whitish. Beneath whitish, edged with brownish. *Adult females* Above brownish, with dusky with five to eight, more or less distinct, lighter bands. These obsolete in *F. suckleyi*. Beneath whitish, buffy, or dusky or brownish. *Young both sexes* Similar to the adult but more clouded.

2. A perfect blackish bands, besides the subterminal broad band. *Young* with about eight light bands, including the ter-

3. (and Northern Asia.)

4. Only three or four blackish bands, besides the broader subterminal band. *Young* never with more than six light bands, includ-

5. *Æsalon* Above pearl-blue or pale ashy blue, the crown edged with ochraceous. Tail crossed by five dark and six light bands, the less mixed or clouded with white; outer webs of primary feathers with light bluish gray, the inner web of the longest feathers. "Mustache" obsolete, or but very slightly indicated. The bill to the throat and a dusky collar more or less conspicuous. *Young* more or less clouded with white. *Young* and *adult* both

Falco columbarius (Linn.)**PIGEON HAWK.**

Popular synonyms. American Merlin; Little Corporal (AUDUBON).

Falco columbarius LINN. S. N. ed. 10, i, 1758, 90; ed. 12, i, 1766, 128.—WILS. Am. Orn. ii, 1810, 107, pl. 15, fig. 3.—AUD. Orn. Biog. i, 1831, 466; B. Am. i, 1839, 88, pl. 21; Synop. 1839, 16.—NUTT. Man. i, 1832, 60.—CASS. in Baird's B. N. Am. 1858, 9, (s. g. *Hypotriorchis*).—COUES, Key, 1872, 214; Check List, 1874, No. 344; 2d ed. 1882, No. 505; B. N. W. 1874, 345. *Hypotriorchis columbarius* GRAY, 1844.—BAIRD, Cat. N. Am. B. 1859, No. 7. *Æsalon columbarius* KAUP, Contr. Orn. 1850, 54.—RIDGW. Nom. N. Am. B. 1881, No. 417. *Falco (Æsalon) lithofalco* var. *columbarius* B. B. & R. Hist. N. Am. B. iii, 1874, 143, 144. *Falco temerarius* AUD. Orn. Biog. i, 1831, 381; B. Am. pls. 75, 92.

HAB. Whole of North America, migrating in winter over whole of Middle America and northern South America (as far as Ecuador and Venezuela), and throughout West Indies.

SP. CHAR. *Adult male.* Above cinereous, varying in shade, but generally of a slaty bluish cast; each feather with a distinct shaft-streak of black, these lines most conspicuous on the head above. Tail with a very broad subterminal band of black, about one inch in width; there are indications of three other bands, their continuity and distinctness varying with the individual, but generally quite conspicuous, and each about half the width of the subterminal one; the latter is succeeded by a terminal one of white, about three sixteenths of an inch in width, sometimes broader; on the lateral feathers the black bands are always conspicuous, being in the form of transverse oblong spots, crossing the shaft, but less extended on the outer web, which is often immaculate except at the end, the broad terminal band always extending to the edge of the feather. Primaries dusky black, margined terminally more or less distinctly with whitish (sometimes fading on the edge only); on the inner web is a series of about eight transverse oval spots of white, and generally corresponding to these are indications of bluish ashy spots on the outer web. Beneath white, this purest on the throat, which is immaculate; there is generally a more or less strong tinge of fulvous beneath, this always prevalent on the tibiae, and on a distinct collar extending round the nape, interrupting the blue above; the tibiae frequently incline to ochraceous rufous. Lateral portions of the head with fine streaks of dusky, these thickest on the upper edge of the ear-coverts, leaving a distinct whitish superciliary streak, those of opposite sides meeting on the forehead. Breast, upper part of the abdomen, sides, and flanks, with longitudinal stripes of umber, each with a shaft-streak of black; on the flanks their shape is modified, here taking the form of spots running in chain-like series; tibiae with narrower and darker streaks; lower tail-coverts with narrow central streaks like those on the tibiae. Frequently there is a strong bluish shade on flanks and lower tail-coverts, sometimes replacing the brown of the spots on the former, and clouding in a similar form the latter. Length about, 11.00; extent, 23.75; wing, 7.20-7.90; tail, 4.90-5.50; culmen, .48-.50; tarsus, 1.30-1.40; middle toe, 1.15-1.25.

Adult female. Pattern of coloration as in the male, but the colors different. The blue above replaced by dark umber-brown with a plumbeous cast, and showing more or less distinct darker shaft-lines; those on the head above very broad, giving a streaked appearance; white spots on inner webs of primaries more ochraceous than in the male. Tail dark plumbeous brown, shading into blackish toward end, with five rather narrow ochraceous or soiled white bars, the first of which is concealed by the upper coverts, the last terminal. White beneath less tinged with reddish than in the male, the tibiae not different from the other portions; markings beneath as in the male. Total length, about 12.50-13.25; extent, 20.50-22.00; wing, 8.00-8.55; tail, 5.50-6.00; culmen, .55-.60; tarsus, 1.55-1.60; middle toe, 1.35.

Young. Above plumbeous brown, tinged with fulvous on head, and more or less washed with the same on the rump; frequently the feathers of the back, rump, scapu-

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Into a rusty tinge at the edge, this color is, however, always prevailing is conspicuously streaked with dusky. Tail plumage is dusky with five regular light bars, those toward the base are, as they are becoming more ochraceous, these bars are more continuous and regular in color, and are seen conspicuously on the middle feathers. Primaries edge terminally into lighter; spots on the inner webs are smaller than, pinkish ochre, outer webs with less conspicuous corresponding spots with soft ochraceous, marked as in adult female, but stripes less is not darker than abdomen.

Acco, like the Peregrine, is resident, locally, throughout but is comparatively rare. Like its larger relative, it is found in the tops of large trees in the forest, but where suitable also builds its nest among rocks.

" says Dr. Brewer,* "is remarkable for its rapid courage and enterprise in attacking birds as large or as small as itself, though generally it only preys upon smaller birds, such as Crows, Red-winged Blackbirds, Robins, and Pigeons."

SUBGENUS *Tinnunculus* Vieillot.

ILL. Ois. Am. Sept. I, 1897, 39. Type *Falco tinnunculus* Linn.
P. Nat. Syst. 1823, 108. Type *Falco sparverius* Linn.

Falco sparverius (Linn.)

coverts with more or less conspicuous cordate spots of black, rather sparsely distributed; basal two thirds of secondaries, and whole of primaries, deep black,—the latter whitish around the terminal margin, and with nine transverse bands of white on inner web of longest (second), the white rather exceeding the black, the points of which do not reach the edge of the feather; lining of the wing white, with conspicuous cordate spots of black. Front and superciliary region more hoary than the forehead, almost approaching white. Whole lateral region of the head, with chin, throat, and lower parts, white; the neck, breast, and sides, however, with a deep tinge of ochraceous, the tint hardly approaching the depth of color seen on the nape. On the head there are (considering both sides) seven black spots,—the first originating in front of the bare anteorbital space (leaving the lores white), and extending in a stripe downward across the malar region, forming a conspicuous "mustache;" the second crosses the tips of the ear-coverts, in the form of an oblong transverse spot; the third is smaller, situated as far behind the last as this is posterior to the "mustache," crossing the side of the neck. The last is an odd nuchal spot, separating the ash of the occiput from the rufous of the hind-neck. Breast and sides with circular or cordate spots of pure black, these varying in size, but generally larger on the sides. Other lower parts immaculate. Wing formula, 2-3-4, 1. Wing, 7.10; tail, 4.50; tarsus, 1.32; middle toe, .98; culmen, .45.

Adult female (No. 10,751, Fort Bridger, Utah: C. Drexler). Blue above confined to the head, which shows rufous patch as in the male; entire upper parts rufous, lighter and less purplish than in the male, everywhere barred with black. Tail with twelve sharply defined narrow bars of black, the subterminal broadest, and about three eighths of an inch in width. Longest primary with eleven transverse spaces of pale rufous, nearly twice as wide as the dusky ones, which scarcely touch the edge. Beneath yellowish white, paler than in the male; breast and sides with rusty longitudinal spots. Head as in the male. Wing, 7.60; tail, 5.20; tarsus, 1.50; middle toe, .90; bill, .50. Wing formula, 2-3-4-1.

Young male (No. 5,581, Medicine Bow Creek, Nebraska, August 7, 1856: W. S. Wood.) Exactly like the adult male, but with rufous darker, approaching to chestnut; spots beneath inclining to a tear-shaped form, and, though more numerous, not so well defined as in the adult; also rufescent tinge beneath more general; blue of the wings with scarcely any spots; white terminal band of tail tinged with rufous. Sometimes the two or three outer feathers are clouded with ash, and possess indication of bars, formed of irregular black spots.

Young female (No. 40,520, Fort Rice, Dakota: S. M. Rothhammer). Generally like the adult, but with rufous above darker, approaching ferruginous; the bars everywhere broader, and purer black; rufous vertical patch streaked centrally with black; spots beneath larger, darker, approaching reddish umber.

VARIATIONS. While perhaps a majority of specimens of this species agree very nearly with those described above, there is nevertheless a very wide range of individual variation, in each plumage. Specimens from the eastern United States are apparently more variable in their markings than western examples, and this is true of any locality within that region. The extreme variation reached in this portion of the continent is that plumage upon which Swainson based his *Falco isabellinus*, which is characterized (1) by the uniform dark plumbeous pileum, the usual rufous crown-spot being absent or much reduced in size; (2) by the whole breast and jugulum, in the adult male, being immaculate deep ochraceous or buff, the few spots, should any be present, confined to the sides. The females of this style are much darker colored than those in the normal

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like the males, usually lack the rufous crown-patch.

Hawk is the American representative of the Kestrel *Finnunculus (finnunculus)*, a considerably larger but otherwise bird. The common note is peculiar, consisting of an unmusical chatter, difficult to describe, but when it is repeated it is easily recognized afterward. Neglected fields and woods are the favorite abode of the Sparrow Hawk, and the bare branches of trees are a convenient and commanding position from which to survey the surroundings, while the knotholes and excavations of the larger woodpeckers afford cozy places for their nests. Upon a lofty branch the Sparrow Hawk is often seen resting or patiently "waiting for something to come along." It sits quietly, in an upright position, sometimes for an hour or more.

Should a thoughtless mouse steal incautiously from its hole, the quick eye of its watchful enemy detects it. The hawk rises from his perch and flies directly over the object of his quest. If the latter be quiet for a while, the hawk poises himself, its fan-like tail widely expanded, and its head turned toward the mouse, waiting for a favorable opportunity to descend upon its prey.

But the mouse is usually rather restless, running about in all directions. It then, after a short halt, zigzagging off to another hole. The hawk, however, follows every movement, shooting rapidly off to intercept it. Its movements are temporarily exactly to correspond with the movements of its prey.

to a rather deep buff or cream-color, which is relieved by a greater or less amount of brown and reddish spotting; the spots are nearly always small, and usually rather scattered, but sometimes they are thickly sprinkled over the entire surface; the markings are generally of several shades of rusty brown, but the tint varies from umber to reddish chestnut.

SUBFAMILY PANDIONINÆ.—THE OSPREYS.

CHAR. Outer toe reversible. Claws very large and strongly curved, of equal length, their under side narrowed and rounded. Plumage without aftershafts, that of the thighs very close and compact, the feathers short.

The above characters separate the Ospreys from all other diurnal Accipitres. (See page 426.) The subfamily includes a single genus, *Pandion*, which occurs throughout the temperate and tropical portions of the globe.

GENUS PANDION SAVIGNY.

Pandion SAVIGN. Desc. de l'Egypte, 1809, 272. Type *Falco haliaëtus* LINN.

GEN. CHAR. Bill inflated, the cere depressed below the arched culmen; end of bill much developed, forming a strong, pendent hook. Anterior edge of nostril touching edge of cere. Whole of tarsus and toes (except terminal joint) covered with rough, somewhat imbricated, projecting scales. Outer toe versatile; all the claws of equal length. In their shape, also, they are peculiar; they contract in thickness to their lower side, where they are much narrower than on top, as well as perfectly smooth and rounded; the middle claw has the usual sharp lateral ridge, but it is not very distinct. All the toes perfectly free. Tibiæ not plumed, but covered compactly with short feathers, these reaching down the front of the tarsus below the knee, and terminating in an angle. Primary coverts hard, stiff, and acuminate, almost as much so as the quill themselves; third quill longest; first longer than fifth; second, third, and fourth sinuated on outer webs; outer three deeply emarginated, the fourth sinuated on inner webs.

Pandion haliaëtus carolinensis (Gmel.)

AMERICAN OSPREY.

Popular synonyms. Fish Eagle; Fish Hawk.

Falco carolinensis GMEL. S. N. 1, 1788, 263.

Pandion carolinensis AUD. B. Am. 1831, pl. 81; Orn. Biog. i, 1831, 415.—CASS. in Baird's

B. N. Am. 1858, 44.—BAIRD, Cat. N. Am. B. 1859, No. 44.

Pandion haliaëtus var. *carolinensis* RIDGW. 1870.—B. B. & R. Hist. N. Am. B. iii, 1874, 183, 184.

Pandion haliaëtus carolinensis RIDGW. Nom. N. Am. B. 1881, No. 425.

Pandion haliaëtus AUD. B. Am. i, 1840, 64, pl. 15; Orn. Biog. i, 1831, 415.—COUES, Key, 1872, 219; Check List 1874, No. 360; 2d ed. 1882, No. 530; B. N. W. 1874, 367.

HAB. Whole of North America, and south through West Indies and Middle America to northern Brazil, Trinidad, and Panama. Represented in the Palearctic Region by the true *P. haliaëtus* (Linn.), and in the Australian Region by *P. haliaëtus leucocephalus* (Gould).

SP. CHAR. Young male (No. 17,227, San José, Lower California, December 15, 1859, J. Xantus). Upper surface dark vandyke-brown, with a faint purplish cast; quills black. Every feather with a conspicuous sharply defined terminal crescent of pure white. Tail

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rowly tipped with white, and crossed with seven or concealed regularity; inner webs almost wholly white; the black bands sharp, & defined after entirely white. Ground color of the head, neck, and entire lower broad stripe from the eye black across upper edge of the out-coverts to black; white head also sparsely streaked with blackish, these streaks minuting medially; no, a faintly tinged with ochraceous, and scarcely with large cordate spots of brown, paler than that of the back, each feather, the shaft black, rest of lower parts immaculate. Lining of wing tinged with ochraceous, the brown of the outer surface over the edge. Under primary coverts with broad transverse spots of primaries grayish white anterior to the emargination irregular; alulae immaculate. Wing formula 2-3-4-1-3. Wing 20.00, .35; tarsus, 1.19-2.15; middle toe 1.20; outer, 1.75; inner, 1.4; posterior, .25 and inner claws of equal length, each measuring 1.20 (phalanx yellow. Feet greenish yellow.

Similar, but upper parts uniform dusky brown, and the breast very finely spotted.

6. 290, Carlisle, Pa., April 12, 1841. S. F. Baird. Similar to adult male, more spotted. Wing formula 3-2-4-1-5. Wing, 20.50; tail, 9.15; culmen, middle toe, 1.70.

as described are those having the breast most discolored. Many others have the breast immaculate, thus in the American bird, especially the adult male. 7, in length of wing from 17.50 to 20.50. Contrary to the rule in this family, the male appears to exceed the

Measurements.

But they never attack them singly. The Fish Hawk nests almost invariably on the tops of trees, and this habit has been noticed in all parts of the country. It is not without exceptions, but these are quite rare. The trees on which their nests are built are not unfrequently killed by their excrement or the saline character of their food and the materials of their nest. The bird is bold and confiding, often constructing its nest near a frequented path, or even upon a highway.

"The nests are usually composed externally of large sticks, often piled to the height of five feet, with a diameter of three. In a nest described by Wilson, he found, intermixed with a mass of sticks, corn-stalks, sea-weed, wet turf, mullein-stalks, etc., the whole lined with dry sea-grass (*Zostera marina*) and large enough to fill a cart and be no inconsiderable load for a horse.

"They are very devoted in their attentions to their mates, and supply them with food while on the nest.

"In some localities the Fish Hawk nests in large communities as many as three hundred pairs having been observed nesting on one small island. When a new nest is to be constructed, the whole community has been known to take part in its completion. They are remarkably tolerant towards smaller birds, and permit the Purple Grackle (*Quiscalus purpureus*) to construct its nests in the interstices of their own. Wilson observed no less than four of these nests thus clustered in a single Fish Hawk's nest, with a fifth on an adjoining branch."

SUBFAMILY ACCIPITRINÆ.—THE KITES, HAWKS, AND EAGLES.

CHAR. Outer toe not reversible, and claws graduated in size, with their under surface grooved, or at least not contracted; bill without distinct teeth in connection with a small circular nostril enclosing a distinct long tubercle. Other characters extremely variable.

The variations of form among the numerous members of this extensive subfamily are so great that it becomes a difficult matter to diagnose it briefly. A fuller diagnosis may be found on page 426, which, taken in connection with the one given above, should enable the student to identify without difficulty a bird belonging to this subfamily.

It is not claimed that the following arrangement is perfectly natural, since it is intended expressly as a convenient artificial analysis to facilitate identification of the North American genera.

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18 inches: inner webs of not more than four or five outer quills lacinated

6, or more, of tarsi naked.

of tarsi without transverse scutellum.

noides. Tail excessively forked the lateral rectrices more than twice as long as the middle pair. Claws grooved beneath. Tarsi covered with fine, irregular scales

ans. Tail double rounded. Claws rounded on their under side. Tarsi covered with minute rounded scales

of tarsi with transverse scutellum

1 emarginate, and bill greatly hooked or else distinctly notched and toothed.

Ictinia. Bill Falcon-like, with distinct, though not prominent notch and teeth. Feet small and robust, the claws not unusually elongated.

Bostrhamus. Bill very slender and greatly hooked, entirely devoid of notch or tooth. Feet slender, the claws unusually elongated. Extralimital; tropical

truncate or rounded, or if emarginate the bill neither greatly hooked nor distinctly notched.

Form slender, the head proportionally small, the beak slender, claws very acute, and tail lengthened. Bill comparatively weak, compressed, high through the base, the culmen much ascending basally, and the cere decidedly arcuate

5. **Circus.** Face surrounded by a "ruff" of stiffened, differently formed feathers, as in the eagle. Tarsus more than twice as long as the middle toe. Wing very long, outer four primaries with inner webs sinuated

5. **Accipiter.** Face without ruff. Tarsus less than twice the length of the middle toe. Wing short, very concave beneath, the outer rectrices much bowed, the five outer with inner webs emarginated

Form short and heavy, the head larger, tail shorter, and legs more robust, with claws less acute. Bill stronger, less compressed

- B.** Wing more than 20 inches; inner webs of outer six primaries distinctly emarginated.
- a*¹. Tarsus densely feathered, all round, to the base of the toes.
12. *Aquila*. Nostril narrowly oval, obliquely vertical. A very distinct web between middle and outer toes. Feathers of the nape distinctly lanceolate.
- a*². Tarsus with lower part naked.
- b*¹. Tail short, much less than two thirds the pointed wing; feet moderately robust, with upper half of tarsus feathered in front. Head crestless; feathers of neck all round, distinctly lanceolate. No distinct web between middle and outer toes
13. *Halæetus*. Tail rounded, of 12 rectrices. Upper outline of cere nearly straight; nostrils with lower end rounded, opening rather abruptly inward.
14. *Thalassœtus*. Tail cuneate, of 14 rectrices. Upper outline of cere much arched; nostrils with lower end pointed and beveled gradually to the level of the cere. (Extralimital; Kamtschatkan—and Aleutian?)
- b*². Tail long, truncated, two thirds or more the very broad, rounded wing. Feet enormously robust, with nearly the whole tarsus naked. Head with a broad erectile crest of lengthened broad and rounded feathers; feathers of neck all round, broad and rounded. A moderately developed web between middle and outer toes.
15. *Thrasœtus*. Secondaries greatly developed, both in length and breadth, reaching to the end of primaries; fifth to seventh quills longest, the outer seven with inner webs shallowly sinuated. Claws enormously large and powerful, but rather obtuse, the inner and posterior ones equal to their digits in length. (Extralimital; tropical.)

GENUS *ELANOIDES* VIEILLOT.

Elanoides VIEILLOT, Nouv. Dict. d'Hist. Nat. xxiv, 1818, 101. Type, *Falco forficatus* LINN.
Naclerus AUCT. nec VIGORS, 1825.

CHAR. *General external characters.* Bill rather small and narrow, intermediate between that of *Pandion* and *Elanus*; compressed anteriorly, and very broad at the base; the terminal hook well produced, the tomia very regular; cere ascending; nostril broadly oval, oblique; gonys nearly straight; tomium of the lower mandible very convex. Lores densely feathered, the feathers bristle-like. Feet robust; tarsus a little longer than the middle toe, covered with large, irregular, hexagonal scales; toes with transverse scutellæ nearly to the base; claws short, strong, abruptly flattened beneath, the edges very sharp, the middle claw bent laterally, the inner side very convex, the projecting edge sharp and entire. No web between the toes. Primaries and rectrices excessively elongated and narrow, the former more than twice the length of the secondaries. Outer tail-feathers about equal to the primaries, and more than twice as long as the middle pair.

*Osteological characters.** Cranium very similar in contour and proportions to that of *Pandion*, but presenting important modifications in minor details. Superciliary process of the lachrymal distinct from the frontal, which is completely ankylosed with the nasal; inner convoluted edge of the palatines scarcely produced downward; nasal septum completely ossified; pterygoid bone narrow, and of a uniform width throughout its length. Sternum similar to that of *Pandion*, having, like it, a pair of indentations on the posterior margin, and destitute of foramina; the clavicle, coracoids, and scapula are also very similar.

Anatomical characters. "Palate flat with two longitudinal ridges; upper mandible with a tuberculate median ridge, lower deeply concave; posterior aperture of the nares oblongolinear, with the edges papillate. Tongue somewhat decurved, emarginate, and finely papillate at the base, flat above, its tip narrow and acutely emarginate. Œsoph-

* Of this genus we have seen only the skull and sternum.

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Small, but very robust; tarsus about equal to middle toe, outer toe inner, and about equal to the hallux; web between outer and middle claws small, but sharp, and well curved; the inner surface rounded by flattened; middle claw with the sharp projecting lateral ridge very strong and toes (except terminal joint of the latter) covered uniformly with scales. Wing long; second to third quill longest, first and intermediate and fourth. First quill with inner web emarginated, near the end; Tail double-rounded, more than one half the wing.

Elanus leucurus (Vieill.)

WHITE-TAILED KITE.

Black-shouldered Kite.

VIEILL. Nouv. Dict. xx 1838, 556.
 1838. — (1838, in Baird & B. N. Am., 1858, 86, — BAIRD Cat. N. Am. B. COUES, Key, 1892, 211, Check List, 1874, N. 67, — B. B. & R. Hist. N. 574, 197, 198.
 EMM. Pl. Col. 1, 1835, pl. 519 (= *sc*). — AUD. B. Am., 1838, pls. 351, 352; v, 1838, 367.
 COV. Bog. An. vol. 1, 1839, l. 351. — NUTT. Man., 1833, 33. Aid. Synop., 1839, 1840, 70, pl. 16.
 (BARTS. " COUES, Proc. Phil. Acad. for *Falco glaucus* BARTS. Trans. Check List, 1892, N. 492. — RIDG. Nom. N. Am. B., 1881, N. 427.

End of continental tropical and subtropical American, south to Paraguay, and Cuba north to southern United States, Texas to Florida and Indian Territory, New Mexico, and California; occasional breeding in portions of Illinois.

ult. Upper surface, including occiput, nape, interscapulars, scapular-coverts, and wings (except lesser and middle coverts), soft, dull-

wing, and tail plain polished blackish, with varying reflections; tertials white, with blackish tips. *Adult.* The white of the head and neck immaculate; back, scapulars and lesser wing-coverts with a soft reflection of dark purplish bronze, the other black portions with a glaucous or chalky cast, with a green reflection in certain lights. *Young.* Feathers of the head and neck with dusky shaft-streaks; the black above less glossy, more brownish, a bottle-green reflection replacing the soft purplish bronze on the back and shoulders; remiges, rectrices, and primary coverts with a narrow terminal border of white.

There is little variation in the coloration of this beautiful species, the only one presenting differences particularly noticeable being No. 56,099 (said to be from England), in which the black in its entire extent is nearly uniform, and glossed with a uniform violaceous slate. This appearance, however, is probably caused by the greater age of the feathers.

The fresh colors of an adult male, shot at Mt. Carmel, Illinois, August 1, 1870, were as follows:

"Bill deep black, the basal half of the lower mandible, the basal portion of the upper beneath the cere, the cere, rictus, and naked eyelids, plumbeous blue; feet similar but paler; claws grayish brown: *iris very dark brown*; interior of the mouth bright cobalt-blue." (No. 84,480, male, Mt. Carmel, Ill., Aug. 1, 1870. Length, 22.75; extent, 50.80.)

In former years common throughout the State, and in some portions even at times abundant, this, the most graceful of all the birds of prey, is becoming scarcer every year. In the northeastern portion of the State it was once common, according to Mr. Kennicott, but at the time he wrote* (1854) it had become rare; while in 1876, Mr. Nelson says† that he can testify to its scarcity, "only two or three instances of its occurrence within the last twenty years having been ascertained." It feeds with the greatest ease while flying, the food being held in the feet, which are reached gently forward at the same moment the bird's head is lowered to tear a mouthful from the object that is being eaten.

GENUS **ELANUS** SAVIGNY.

Elanus SAVIGN. Desc. de l'Egypte, 1809, 224. Type *Falco melanopterus* DAUD., = *F. cæruleus* DESF.

GEN. CHAR. Bill rather small, very wide basally, much compressed anteriorly, the tip well produced; lower mandible declinate, obliquely truncated, its tomium greatly arched; superior tomium somewhat "bulged" laterally, and slightly sinuated; gonys straight, or very slightly convex. Nostrils roundish, or oval and horizontal, in middle

* Illinois Agricultural Report, 1853-54.

† Bull. Essex Inst., viii, 1876, p. 118.

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***Ictinia mississippiensis* (Wils.)**

MISSISSIPPI KITE.

. Blue Kite; Blue Snake Hawk

mississippiensis WILS. Am. Orn. ill, 1811, no. pl. 25, fig. 1

mississippiensis BP 1850. Cass. in Baird's B. N. Am. 1858, 37. BAIRD, B. N. 36—COUES, Key, 1872, 211; Check List, 1874 No. 33.

GMEL. "AUD. B. Am 1834 pl. 117, Orn. Blog. li. 1834, 105; v. 1830, 374 (nec

(NUTT. Man. 1, 1833, 92 *nec* VIEILL.—AUD. Synop 1830, 14; B. Am. 1, 1840,

as "(BARTS)" COUES, Proc. Phil Acad. 1872, *Falco subcaeruleus* BARTS. 10; 2d Check List, 1892, No. 491. BIRDW. Nom. N. Am. B. 1891 No. 428

thern eastern United States; north regular to South Carolina and more rarely to Iowa and Wisconsin, and usually to Pennsylvania; also Mexico and Guatemala.

Immature No. 84,488. Fox Prairie, Richland Co., Ill., August 19, 1871. Irides, and entire lower parts plumbeous ash, becoming by a gradual shade on the head and secondaries where the shade is pale cinereous, the tips of the secondaries being silvery white. Tarsus and claws plumbeous, dark plumbeous, approaching plumbeous black on the lower edges and upper tail-coverts, the tail being nearly pure black. Distinct narrow concealed stripe of chestnut-rufous on the outer webs, the same on the inner webs, feathers of the head, neck, and lower white beneath the surface, this showing in partly exposed spots on the scapulars also with large concealed white spots, and tail feathers black on both sides. Wing formula 3 2 4 5-6, 1. Early, the second concavely, emarginated. Tail emarginated, lateral both of fork. 40. Wing 31.25; tail 21.5; culmen 2.5; tarsus 14.5; middle toe 10.5.

bordered with ochraceous white, and with concealed quadrate spots of the same; primary coverts, secondaries, and primaries sharply bordered terminally with pure white. Tail black (faintly whitish at tip), with three (exposed) indistinct bands of a more slaty tint; this changing to white on the inner webs, in the form of angular spots forming the bands. Lining of the wing pale ochraceous, transversely spotted with rusty rufous; under primary coverts with transverse spots of white. Wing, 11.90; tail, 6.40.

Six adult males measured as follows: Wing, 10.16–11.85; tail, 6.00–8.80; culmen, .60–.65; tarsus, 1.35–1.55; middle toe, 1.00–1.10.

Five adult females: Wing, 11.30–12.80; tail, 6.50–8.00; culmen, .60–.65; tarsus, 1.30–1.40; middle toe, 1.00–1.05.

This neat and spirited falcon-like Kite is not an uncommon bird in some localities of the southern portion of the State. It is frequently an associate of the Swallow-tail, which it rivals in the gracefulness of its flight and even excels in swiftness. In August, 1871, it was very plentiful on Fox Prairie. It was usually observed sailing about, far above the Swallow-tails, but now and then half closing the wings and pitching nearly straight downward with the velocity of an arrow, as if to strike the earth; but by a sudden extension of the wings instantly checking its rapid descent and remounting, by a steep angle, almost to the height from which it had started, the whole of the downward and upward courses unaccompanied by a single motion of the wings. This performance was sufficiently startling when done by a single bird; but when several plunged headlong simultaneously, their tracks crossing one another at various angles, the effect was impressive to an extreme degree.

Regarding his experience, in the vicinity of Cairo, Mr. Nelson writes as follows (*Bull. Essex Inst.*, IX., 1877, p. 58):

"Their power of sight is truly wonderful. I saw them repeatedly dart with unerring aim upon some luckless grasshopper, from an elevation of at least one hundred yards.

"No less remarkable in their power of flight. I repeatedly saw them dart down from a great height with such a velocity that it would seem an impossibility for them to escape being dashed to pieces on the ground, but instead, when within a few feet of the earth, they would suddenly spread their wings and the reaction would lift them with almost equal rapidity to about one half their former elevation. They were so shy that it was impossible to get within gunshot of them."

Audubon regards this species as remarkable for its devotion to its young, and narrates that in one instance he saw the female bird lift up and attempt to carry out of his reach one of her fledglings. She carried it in her claws a distance of thirty-five yards or more.

He also describes their flight as graceful, vigorous, and protracted. It feeds on the wing with great ease and dexterity. It rarely, if ever, alights on the earth; and, when wounded, its movements on the ground are very awkward. It is never known to attack birds or quadrupeds of any kind, though it will pursue and annoy foxes and crows, and drive them to seek shelter from its attacks. The Mississippi Kite is said to be by no means a shy bird, and may be easily approached when alight, yet it usually perches so high that it is not always easy to shoot it. (BREWER.)

GENUS **CIRCUS** LACÉPÈDE.

* *Circus* LACÉPÈDE, Mem. de l'Inst. III, 1806, 566. Type *Falco cyaneus* LINN.

GEN. CHAR. Form very slender, the wings and tail very long, the head small, bill weak, and feet slender. Face surrounded by a ruff of stiff, compact feathers, as in the Owls. Claws strongly curved, very acute. Wings very long, the third or fourth quills longest; first shorter than the sixth; outer three to five with inner webs sinuated. Tail very long, about two thirds the wing; rounded.

The relationships of this well-marked genus are to *Accipiter* on the one hand, and *Elanus* on the other; nearest the former, though it is not very intimately allied to either.

The species are quite numerous, numbering about twenty, of which only three are American. North America possesses but one (*C. hudsonius*, Linn.), and this with the *C. cinereus*, Vieill., of South America, is closely related structurally to *C. cyaneus* of Europe, but is sufficiently distinct.

The birds of this genus frequent open, generally marshy, localities, where they course over the meadows, meads, or marshes with

- Circus cyaneus* var. *hudsonius* COUES, Key, 1872, 210; Check List, 1874, No. 333; B. N. W. 1874, 327.—B. B. & R. Hist. N. Am. B. iii, 1874, 214.
Falco uliginosus GMEL. S. N. i, 1788, 278.—WILS. Am. Orn. vi, 1812, 67, pl. 51, fig. 2.
Circus cyaneus? var? *americanus* SW. & RICH. F. B.-A. ii, 1831, 55, pl. 29.
Falco cyaneus "LINN." AUD. B. Am. vi, 1843, pl. 356 (*nec* LINN.)
Circus cyaneus "BOIE," NUTT. Man. 1833, 109.—AUD. Synop. 1839, 19; B. Am. i, 1840, 105, pl. 26.

HAB. The whole of North America; south, in winter, to Panama, north to Hudson's Bay Territory and Alaska; Cuba. Breeding throughout western United States (south to Texas), and in Eastern States chiefly north of 40°.

SP. CHAR. *Adult male* (No. 10,764, Washington, D. C., December). Head, neck, breast, and upper parts light cinereous, palest anteriorly where it is uninterrupted or continuous; occiput somewhat darker, with a transverse series of longitudinal dashes of white, somewhat tinged with reddish. Back, scapulars, and terminal third of secondaries, with a dusky wash, the latter fading at tips; five outer primaries nearly black, somewhat hoary on outer webs beyond their emargination; lesser wing-coverts faintly mottled with paler, or with indistinct dusky spots. Upper tail-coverts immaculate pure white. Tail bluish cinereous, mottled with white toward base; crossed near the end with a distinct band of black, and with about five narrower, very obscurely indicated ones anterior to this; tip beyond the subterminal zone fading terminally into whitish. Whole under side of wing (except terminal third or more of primaries) pure white; immaculate, excepting a few scattered transverse dusky spots on larger coverts. Rest of under parts pure white everywhere, with rather sparse transverse cordate spots of rufous. Wing, 14.00; tail, 9.20; tarsus, 2.80; middle toe, 1.30. Third and fourth quills equal, and longest; second intermediate between fifth and sixth; first 5.81 inches shorter than longest.

Adult female (No. 16,758, Hudson's Bay Territory: Captain Blakiston). Umber-brown above, feathers of the head and neck edged laterally with pale rufous; lores, and superciliary and suborbital stripes dull yellowish white, leaving a dusky stripe between them, running back from the posterior angle of the eye. Lesser wing-coverts spattered with pale rufous, this irregularly bordering and indenting the feathers; feathers of the rump bordered with dull ferruginous. Tail deep umber, faintly fading at the tip, and crossed by six or seven very regular, sharply defined, but obscure, bands of blackish; the alternating light bars becoming paler and more rufous toward the edge of the tail, the lateral feathers being almost wholly pale cream-color or ochraceous, darker terminally; this tint is more or less prevalent on the inner webs of nearly all the feathers. Ear-coverts dull dark rufous, indistinctly streaked with dark brown; the feathers of the facial disk fine pale cream-color, each with a middle stripe of dark brown; throat and chin immaculate dirty white, like the superciliary and suborbital stripes. Beneath dull white, with numerous broad longitudinal stripes of umber-brown; these broadest on the breast, growing gradually smaller posteriorly. Under surface of primaries dull white, crossed at wide intervals with dark brown irregular bars, of which there are five (besides the terminal dark space) on the longest quill.

Young female (No. 15,585, Bridger's Pass, Rocky Mountains, August: W. S. Wood). Upper parts very dark rich clove-brown, approaching sepia-black; feathers of the head bordered with deep ferruginous, and lesser wing-coverts much spotted with the same, the edges of the feathers being broadly of this color; secondaries and inner primaries fading terminally into whitish; upper tail-coverts tinged with delicate cream-color (immaculate). Tail with four very broad bands of black, the intervening spaces being dark umber on the two middle feathers, on the other fine cinnamon-ochre; the tip also (broadly) of this color. Ear-coverts uniform rich dark snuff-brown, feathers of satiny texture; feathers of facial disk the same centrally, edged with fine deep rufous. Entire lower parts deep reddish ochraceous or fulvous rufous, growing gradually paler posteriorly; immaculate, with the exception of a few faint longitudinal stripes on the breast and sides. Under side of wing as in the last, but much tinged with rufous.

BIRDS OF ILLINOIS.

... to judge from the large series of specimens ... does not appear to be the slightest difference between western specimens, in any stage of plumage.

... is quite distinct from the European *C.* ... the two species are much alike in some plumages.

... *C. cinereus* is wholly destitute of the dusky sub- ... tail-feathers and secondaries, and lacks the ... on the lower parts, which, posterior to the jugu- ... pale white. The dimensions are also less ... *C. hudsonius*.

Measurements of *C. hudsonius*.

Age	Sex	Culmen	Tarsus	Middle Toe	Specimens
Adult	♂	60-70	2.85-2.90	1.20-1.30	36
Immature	♀	70-75	2.85-3.35	1.22-1.55	32

... of August 17, 1867, in the Truckee Valley, ... and 18½ inches in length by 42 in spread of wings. ... black, more bluish basally; cere and rictus green- ... yellow, the former purer yellow on top; iris yellowish ... toes rich orange-yellow, the claws jet-black.

... August and December, 1867, on

back and fights furiously. In the winter its notes while on the wing are sharp, and are said to resemble the syllable *pee-pee-pee*.

"Mr. Audubon has found this Hawk nesting not only in low lands near the sea shore, but also in the barrens of Kentucky and on the table lands of the Alleghanies, and once in the high covered pine-barrens of Florida.

"After having paired, the Marsh Hawks invariably keep together, and labor conjointly in the construction of the nest, in sitting upon the eggs, and in feeding the young. Their nests are variously constructed as to materials, usually chiefly of hay somewhat clumsily wrought together into the form of a nest, but never very nicely interwoven; occasionally, in more northern localities, they are lined with feathers, in some cases with pine-needles and small twigs." (BREWER.)

GENUS **ACCIPITER** BRISSON.

GEN. CHAR. Four to five outer primaries with inner webs emarginated; third to fifth quills longest; inner toe reaching scarcely beyond the first joint of the middle toe or falling short of it.

Form slender, the tail long, the wing short and rounded, the feet slender, claws very acute. Head comparatively small; the bill rather weak. Bill nearly as deep through the base as the length of the culmen (chord), its upper outline decidedly ascending basally; maxillary tomium with a prominent "festoon." Nostril broadly ovate, obliquely horizontal. Superciliary shield very prominent. Tarsus longer than the much lengthened middle toe, the frontal and posterior series of transverse scutellæ very distinct and continuous (except in males of some of the smaller species, in which these scales are "fused" into a continuous plate). Outer toe longer than the inner. Wing comparatively short, much rounded, and very concave beneath; third to fifth quills longest, the first usually shortest, and never longer than the sixth; outer three to five with inner webs sinuated. Tail long (nearly equal to the wing), usually rounded, occasionally even, and rarely slightly emarginated.

The above diagnosis is intended to cover the characters of this genus in its most comprehensive sense. In North America there are two strongly marked subgenera, which may be characterized as follows:

Accipiter. Less than one third of the tarsus feathered in front, the feathering widely separated behind; frontal scutellæ uninterrupted at the digito-tarsal joint. (Tarsal scutellæ fused into a continuous plate in adult males of the smaller species.)

Astur. More than one third (nearly one half) of the upper part of the tarsus feathered in front, the feathering scarcely separated behind; frontal scutellæ interrupted at the digito-tarsal joint, where replaced by small scales. (Tarsal scutellæ never fused.) Size larger than typical *Accipiter*.

BIRDS OF ILLINOIS.

There is found a third subgenus which may be distinguished from typical *Accipiter* as follows:

Outer primaries with inner webs emarginated; middle toe longest; inner toe not reaching middle of second toe.

Inner outer primaries with inner webs emarginated; middle toe longest; inner toe reaching to or beyond middle of middle toe.

SUBGENUS *Accipiter* BRISSON.

TYPE SPECIES. Type *Falco niger* LINN.

AND COMP. 1, tabularis 1799. Same type.

AND COMP. 2, tabularis 1854, 538. Type *Falco stanleyi* AUD., = *F.*

of this subgenus are generally of small size and build, with a graceful and apparently delicate structure and remarkable strength and unsurpassed daring. They differ from species of *Icthyophaga* mainly in less robust organization.

Very numerous, and most plentiful within the tropics. The Old World possesses about thirty nominal species. America has, so far as known, thirteen species, two of which are from Cuba. These the reader may find carefully

Accipiter cooperi Bonap.**COOPER'S HAWK.**

Popular synonyms. Stanley's Hawk; Blue Chicken Hawk; Blue Hawk; Blue Quail Hawk; Swift Hawk; Blue-backed Hawk; Blue Darter.

Falco cooperi BP. Ann. Lyc. N. Y. ii, 1826, 433; Am. Orn. i, 1828, pl. 10, fig. 1.

Astur cooperi BP. 1838.—AUD. B. Am. i, 1840, 98, pl. 24.

Accipiter cooperi DEKAY, Zool. N. Y. ii, 1844, 18, pl. 4, fig. 5.—Cass, in Baird's B. N. Am. 1858, 16.—BAIRD. Cat. N. Am. B. 1859, No. 15, 16.—COUES, Key, 1872, 112; Check List, 1874, No. 339; 2d ed. 1882, No. 495; B. N. W. 1874, 334.—RIDGW. Nom. N. Am. B. 1881, No. 431.

Nisus cooperi SCHLEG. Rev. Acc. 1873, 73.—B. B. & R. iii, 1874, 230.

Falco stanleyi AUD. B. Am. 1831, pls. 36, 141; Orn. Biog. i, 1831, 186.

Accipiter mexicanus SW. F. B.—A. ii, 1831, 45.—Cass, in Baird's B. N. Am. 1858, 17.—BAIRD, Cat. N. Am. B. 1859, No. 16.

Nisus cooperi var. *mexicanus* B. B. & R. Hist. N. Am. B. iii, 1874, 231.

HAB. Whole of the United States and table-lands of Mexico; north in summer to New Brunswick, the Saskatchewan, and Washington Territory; south, in winter, to Costa Rica and Veragua; breeding throughout its United States range.

SP. CHAR. Wing, 8.70-11.00; tail, 7.80-10.50; culmen, 0.58-0.80; tarsus, 2.30-2.85; middle toe, 1.45-1.85. Fourth or fifth quill longest; first equal to or shorter than tenth; outer five with inner webs sinuated. Tail rounded. Tarsi usually distinctly scutellate.

Adult. Above slate-color, varying from a fine bluish to a brownish cast, the shafts of the feathers black. Pileum plumbeous black, the occipital feathers snow-white beneath the surface; primaries plain brownish slate, their shafts clear brown. Tail narrowly tipped with white, and crossed by four very regular, but sometimes not sharply defined, bands of dusky, narrower than the slaty ones, the last broadest, the first nearly obsolete, and concealed by the coverts, which are sometimes narrowly tipped with white. Lower parts white and rufous, in transverse bars, the shafts of the feathers black, and the rufous bars usually connected along the middle portion of the feathers; tibiae more deeply colored, the rufous usually predominating; crissum immaculate white. Lining of the wing white, irregularly spotted with deep rufous; inner webs of the primaries with transverse bands of dusky and white anterior to their emargination and silvery gray terminally, the dusky bands about seven in number on the longest quill, the two colors nearly equal in width. **Male.** Slate of the upper parts of a fine bluish cast; nape and sides of the head bluish ashy, the sides of the breast usually tinged with the same. Wing, 8.85-9.40; tail, 7.80-8.30; culmen, .60-.68; tarsus, 2.30-2.60; middle toe, 1.45-1.55. (Eight specimens.) **Female.** Slate of the upper parts of a brownish cast, nape and sides of the head dull rusty brownish, the sides of the breast without ashy tinge. Wing, 10.00-10.80; tail, 9.00-9.40; culmen, .70-.80; tarsus, 2.65-2.85; middle toe, 1.60-1.85. (Five specimens.) **(Colors in life.** Terminal half of bill deep black, basal half pale blue; cere greenish yellow; iris deep orange-red; tarsi and toes deep lemon-yellow; claws deep black.)

Young. Above grayish brown, the feathers more or less bordered with rusty; the scapulars and upper tail-coverts with concealed white spots; the occiput blackish, with the bases of the feathers white, and the pileum and nape streaked with rusty. Tail grayish brown, tipped with whitish, and crossed by four bands of brownish black or dusky. Lower parts white, longitudinally striped with clear dusky brown, the shafts black. **(Colors in life.** Iris varying from greenish white to chrome-yellow; bill blackish terminally, pale blue basally; tarsi and toes varying from very pale greenish yellow to lemon-yellow; claws slate-black.)

*Fresh colors of an adult male killed January 16, 1867, at Mount Carmel, Illinois. Length, 17 inches; extent, 30.50 inches.

BIRDS OF ILLINOIS.

Individual variation in this species though very considerable, is limited by the above diagnosis.

Parula is a common resident in all wooded portions.

Its habits and more prominent characteristics cannot be described than in the following, by "J. M. W." in the *Illinois Ornithologist* for December, 1881, pp. 73, 74.

In describing my notes on the breeding habits of the vivacious Sharp-shinned Hawk, we must pay our compliments to the species in general. Indeed through the season it forces itself upon our notice in so many ways, and with such persistence, that we are forced to accept its prior claims. When we go into the leafless

the first week in April, for our earliest set of Buteos, Hawks are already paired and apparently ready to begin nesting. They feign alarm at our approach to the old nest, scolding us, scold us well as we go from nest to nest.

With the sex when house-hunting, the females are not easily suited. The old home, though in good shape, is in a neighborhood where callers are too free, and must be taken to choose a new tenement.

About the twenty-fifth of April, when we once more visit the Buteos, hoping for a second clutch, we are surprised to find the first egg of a Cooper which has taken possession of this old abode. The second week in May they are breeding.

standing on a level with the bottom of the nests it is difficult for a climber to reach inside. The males assist at intervals in bringing sticks, and unite with their mates in scolding any witness of their house-raising.

The fecundity of this Hawk, under the peculiar persuasion of the oölogist, is not so great as its small congener's, yet it will lay three clutches each year in as many nests, if the first and second sets are taken. Five eggs is the usual clutch, though I have seen four eggs incubated many times, and have taken an extreme clutch of six. The first egg laid is usually pale blue, the rest of the nest complement is lighter, and the eggs, as a whole, fade as incubation progresses. Two weeks are occupied in laying, and at the end of one week's incubation the eggs can be easily blown. Sets with markings are not rare; but the pigment is used sparingly, so as a rule a fair series of these eggs present few changes and are unattractive.

Coopers are the most deadly scourge in country farm-yards. While the Buteos give warning of their whereabouts by soaring far overhead for hours, and sometimes days, before dropping among the young poultry, the dreaded Accipiters, sailing very low, will suddenly start over a wall and be off with a chicken without notice. The old domestic cocks and Guinea-fowl will see a Buteo when but a speck in the sky, and on a too near approach to the earth of the common enemy, sound an alarm which sends all the timid ones to cover. But even after repeated raids of the Cooper, his advance is so unheralded, and his dash so quick, that he gets off scot free, even though the farmer stands in his doorway with gun in hand."

***Accipiter velox* (Wils.)**

SHARP-SHINNED HAWK.

Popular synonyms. Little Swift Hawk; Slate-colored Hawk; Bullet Hawk.

Falco fuscus GMEL. S. N. i, 1788, 280, (not of FABRICIUS, 1780).—NUTT. Man. i, 1833, 87.

Accipiter fuscus BP. 1838.—CASS. in Baird's B. N. Am. 1858, 18.—BAIRD, Cat. N. Am. B. 1859, No. 17.—COUES, Key, 1872, 212; Check List, 1874, 338; 2d ed. 1882, No. 494; B. N. W. 1874, 333.—RIDGW. Nom. N. Am. B. 1881, No. 432.

Astur fuscus AUD. B. Am. i 180, 100, pl. 25.

Astur fuscus KAUT 1850. B. B. & R. Hist. N. Am. B. III, 1874, 234.

Falco color WILS. Am. Orn. v, 192, 116, pl. 45, fig. 1.

Falco pennsylvanicus WILS. Am. Orn. vi, 1812, i, pl. 46, fig. 1.

HAB. The whole of North America; south, in winter, to Panama and the Bahamas; breeding nearly throughout the United States and northward.

SP. CHAR. Wing, 6.35-8.90; tail, 5.50-8.20; culmen, .35-.60; tarsus, 1.85-2.30; middle toe, 1.10-1.55. Fourth and fifth quills longest, third nearly equal to sixth, outer five with inner webs emarginated. Tail even or slightly emarginated.

Adult male. Above plumbeous, becoming gradually darker on the pileum, the feathers with blackish shaft-streaks. Tail rather lighter, usually browner, sometimes with a narrow white terminal margin, crossed with four dusky bands. Occipital feathers pure white beneath the surface, and scapulars with large concealed roundish spots of the same. Lower parts mixed white and rufous, in transverse spots or bars, the rufous bars usually connected along the middle of the feather, the shaft being conspicuously darker. Throat and cheeks streaked but not barred. Crissum and anal region immaculate pure white. Tibia usually with the rufous predominating, rarely uniform rufous. Wing, 6.70-7.10; tail, 5.80-6.10; culmen, .30-.43; tarsus, 1.90-2.05; middle toe, 1.10-1.25.

Adult female. Similar to the male, but less bluish above, and the white of the lower parts less pure. Wing, 7.00-8.80; tail, 6.60-8.20; culmen, .45-.60; tarsus, 2.00-2.25; middle toe, 1.30-1.55.*

Young male. Above dark sepia, the feathers bordered terminally with rusty, those of the nape widely edged with the same, or with fulvous whitish; feathers of the pileum similarly but more narrowly edged with the same. Tail brownish gray, crossed by four to five well-defined, continuous, narrow bands of blackish. Scapulars and upper tail coverts with concealed large spots of white, and occipital region white beneath the surface. Beneath, white, with or without an ochraceous tinge, the anal region and crissum immaculate, the throat streaked with dusky; the breast, abdomen, sides, and flanks with broad stripes of dilute sepia, with darker shaft-streaks, these stripes sometimes dilating on the sides into chain-like series of spots; tibia with elliptical or tear-shaped stripes, or variously shaped spots, of dilute sepia, on a white or pale rusty ground. Wing, 6.35-6.95; tail, 5.50-6.30; culmen, .35-.40; tarsus, 1.85-2.05; middle toe, 1.05-1.25.

Young female. Exactly like the young male in markings and colors. Wing, 7.75-8.60; tail, 6.50-7.60; culmen, .45-.50; tarsus, 2.05-2.30; middle toe, 1.30-1.50.

Dr. Brewer gives us the following biography of this species, in *History of North American Birds*, Vol. III., pp. 227-229:

object of its pursuit so suddenly as to render hopeless any attempt to escape. It has frequently been known to seize and kill a bird so large that it was unable to carry it, and had to drop to the ground.

"In nearly every instance the nest of this Hawk has been constructed in trees. It is usually large in proportion to the size of the bird, and its materials are somewhat elaborately put together; it is composed chiefly of large sticks and twigs, and the whole platform is covered with a thin lining of dry leaves, mosses, grass, etc. Mr. John Krider, of Philadelphia, found a nest in New Jersey, in the vicinity of that city, which was built on the edge of a high rock."

SUBGENUS *Astur* LACÉPÈDE.

Astur LACÉP. Menag. Mus. Hist. Nat. 1815, 505. Type, *Falco palumbarius* LINN.

Notwithstanding the vast difference in size between the typical species of *Astur* and those of *Accipiter*, the details of structure are essentially the same, the greatest differences between them being very nearly bridged over by species of intermediate size and structure.

North America possesses a single species of the subgenus *Astur*, and this is a near relative of *A. palumbarius*, but sufficiently distinct, having the plumage of the lower parts much more delicately penciled and the color of the upper parts more bluish than in the European species.

Accipiter atricapillus (Wils.)

AMERICAN GOSHAWK.

Popular synonyms. Blue Hen Hawk or Chicken Hawk.

Falco atricapillus WILS. Am. Orn. ii, 1808, 284, pl. 52, fig. 3.

Astur atricapillus BP. 1830.—NUTT. Man. 1833, 85.—CASS. in Baird's B. N. Am. 1858, 15.—

BAIRD, Cat. N. Am. B. 1859, No. 14.—COUES, Key, 1872, 212; Check List, 1874, No. 340; 2d ed. 1882, No. 496; B. N. W. 1874, 338.—RIDGW. Nom. N. Am. B. 1881, No. 433.

Astur palumbarius var. *atricapillus* B. B. & R. Hist. N. Am. B. iii, 1874, 237.

Falco palumbarius "LINN."—AUD. B. Am. pl. 141; Orn. Biog. ii, 1834, 241 (*nec* LINN.).

Astur palumbarius AUD. Synop. 1839, 18; B. Am. i, 1840, 95, pl. 23.

Accipiter (Astur) palumbarius SW. & RICH. F. B.-A. ii, 1831, 39, pl. 26.

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lus var. *strutulus* (part) Ridgw. In B. B. & B. Hist. N. Am. B. 44, 1874, adult.

rn North America (except coast of Alaska, east and south of Kotzeb; cross greater part of the United States (Pacific coast excepted), breed- of the United States. (Represented in the Pacific province by *A. fulus* Ridgw.)

adult male (No. 44,940 Boston, Mass. E. A. Samuels). Above continuous te of the feathers inconspicuously black. Tail larger and less bluish, • about .25 of an inch wide and crossed by five broad, faintly defined these most distinct on inner webs, the first concealed by the upper and partially so; the last, or subterminal one, which is about twice as measuring about one inch in width. Primaries darker than the tail ting black. Forehead, crown, occiput, and ear-coverts pure plumbeous low-white beneath, the surface much exposed on the occiput; a broad ra-audibular stripe beginning above the posterior angle of the eye, r the ear-coverts to the occiput pure white with fine streaks of black; grayish white. Lower parts white, the whole surface except throat verta) covered with numerous narrow transverse bars of slate, on the much broken and irregular, forming fine transverse zigzags, pos- more regular, and about .10 of an inch wide. The white a very little at, and cheeks without transverse bars, but with very sharp shaft- breast, sides, and abdomen, a median longitudinal broad streak of her, the shaft black; on the tibia, where the transverse bars are nar- regular the shaft streaks are also finer, anal region finely barred; immaculate pure white. Lining of the wing barred more coarsely an the breast, under surface of primaries with white prevailing, this lvery toward the ends; longest fourth with six oblique transverse the outlines of which are much broken. Wing formula, 1 5.5-6-2, 1-10 1.50; tarsus, 3.70; naked portion, 1.35; middle toe, 2.00; inner t. 1.21, outer, .00.

(No. 12,330, Brooklyn, N. Y.: J. Ackhurst). Almost precisely similar to above less bluish; bands on tail more distinct, eye dark roseate ~~in~~

but much lighter. Beneath pure white, all the feathers, including lower tail-coverts, with sharp, central, longitudinal streaks of clear dark brown, the shafts of the feathers black; on the sides and tibiae these streaks are expanded into a more acuminate, elliptical form; the crissum only is immaculate, although the throat is only very sparsely streaked; on the ear-coverts the streaks are very fine and numerous, but uniformly distributed.

Young female, second year? (No. 26,921, Nova Scotia: W. G. Winton). Head above, nape, rump, and upper tail-coverts, with a deep ochraceous tinge; the character of markings, however, as in the male. Bands on the tail more sharply defined, the narrow white bar separating the black from the grayish bands more continuous and conspicuous; lateral feathers more mottled; grayish tip of tail passing terminally into white. Beneath with a faint ochraceous wash, this most apparent on the lining of the wings and tibiae; streaks as in the male, but rather more numerous, the throat thickly streaked.

Young male, first year (No. 49,662, Calais, Me.: G. A. Boardman). Differs from No. 26,921 as follows: On the wings and upper tail-coverts the yellowish white spots are less concealed, or, in fact, this forms the ground-color; secondary coverts ochraceous white, with two very distinct transverse spots of dark brown, rather narrower than the white spaces; tips of feathers broadly white; secondaries grayish brown, tipped with white, more mottled with the same toward bases, and crossed by five bands of dark brown, the first two of which are concealed by the coverts, the last quite a distance from the end of the feathers; upper tail-coverts white, mottled on inner webs with brown, each with two transverse broad bars, and a sub-terminal cordate spot of dark brown, the last not touching the edge of the feather, and the anterior bars both concealed by the overlying feather. Tail grayish brown, tipped with white, and with six bands of blackish brown; these bordered with white, as in the older stage. Markings beneath as in the older stage, but those on the sides more cordate. Wing formula, 4, 5, 3-6-7-2-8-9, 1, 10. Wing, 14.00; tail, 11.50.

Some of the examples upon which the supposed western race "*A. atricapillus* var. *striatulus*," of "History of North American Birds" (Vol. III., pp. 238-240) was based, prove to be only very old birds of the true *A. atricapillus*. They differ from the ordinary plumage of the adult in the much finer pencilings of the plumage of the lower parts, and more bluish cast to the upper parts.

This daring and powerful hawk is by no means common in Illinois, where it makes its appearance only in winter. Mr. Nelson (page 119 of his list) says of it as follows:

"Formerly a common winter resident; now very rare. Dr. A. L. Marcy, of Evanston, found them quite plentiful during the winter of 1870-71, and obtained specimens. The only time I ever saw the bird alive, was the 3d of May, 1876, at Waukegan, when a fine adult specimen passed slowly overhead and disappeared toward the north."

GENUS **ASTURINA** VIEILLOT.

Asturina VIEILL. Analyse, 1816, 24. Type *Falco nitidus* LATH.

SP. CHAR. Somewhat similar to *Astur*, but of much heavier and more robust build; tarsi longer and stouter, tail shorter and less rounded, wings longer, etc. Bill more elongated than in *Astur*, the cere longer, and the festoon on the commissure more developed; nostril oval, horizontal. Wings rather short, but less concave beneath than in

BIRDS OF ILLINOIS.

...st, ...shorter than eighth or ninth, four outer quills
...considerably shorter than the wing, slightly emar-
...longest. Feet large and robust, when outstretched
...tars, very robust compared to the toes, about one
...on the frontal and posterior rows of transverse
...outer toe longer than inner; claws strong, well
...color; old and young plumages very different.
...America and contains but two species, the *A.*
...*plagiata* (Licht.) of Middle America.

...related to *Leucopternis* KAUP, but differs as follows:
...Tail, even, or emarginate, the lateral pair of
...still decidedly horizontal. Young and adult ex-
...
...than tenth. Tail slightly rounded, the lateral pair of
...nearly regular rather vertical than horizontal. Young
...plumage

Asturina nitida plagiata (Licht.)

MEXICAN GOSHAWK.

...N. Amer., 1854, 3
...Mis. P. B. Asturina, 1862, 1—Sci. & Salv. Ex. Orn. 1869,
...1873, 28. (Check List, 1874, No. 358; 2d ed. 1892, No. 527 ("plagiata")
...Ridgw. 1873—B. B. & R. Hist. N. Am. B. iii, 1874, 246.
...Ridgw. Nom. N. Am. B. 1881, No. 445
...Peters B. N. Am. 1858, 35 (not *Falco nitidus* LATH.). BAIRD,
...N. B.

...Mexico, Arizona, south to Panama, north to southwestern border of
...L. H. S. Ridgw. Ann. Nat.

Adult female (No. 34,002, Mazatlan, June: Colonel Grayson). Cinereous, above darker, the fasciæ of the wings hardly observable; front and throat scarcely whitish; rump almost pure black; second tail-band much broken and restricted. Ashy prevailing on the jugulum, ashy bars beneath rather broader. Wings, 11.00; tail, 7.50; tarsus, 2.80; middle toe, 1.70.

Young male (No. 35,060, Rio de Coahuayana, W. Mexico, October: J. Xantus). Above, from bill to upper tail-coverts, dark bistre-brown, almost black; feathers of the head and neck edged laterally with pinkish ochraceous, or sulphuret-of-manganese color; scapulars with nearly whole outer webs of this color, they being blackish only along edges and at ends; middle wing-coverts spotted with the same. Secondaries and primaries faintly tipped with whitish; secondaries with indications of darker bands, and outer webs of primaries with still more obscure ones: upper tail-coverts white, with sagittate specks of black, one or two on each. Tail umber-brown (considerably lighter than the wings), tipped with pinkish ash (this passing terminally into dull white) and crossed with six or seven bands of black (these becoming gradually, but very considerably, narrower toward the base). Beneath white, with vinaceous tinge (this deepest laterally); breast, abdomen, and sides with large tear-shaped or cuneate spots of black; tibiae with numerous transverse bars of the same.

Young female. Similar to last, but the brown lighter, and more approaching umber.

In both sexes the iris is brown, bill and claws black, or bluish black; cere, rictus, legs, and feet yellow.

Four other adults, with sex not indicated on labels, measure as follows:

Wing, 10.00-11.70; tail, 6.80-8.00; culmen, .90-.95; tarsus, 2.65-2.80; middle toe, 1.50-1.65.

A specimen of this tropical species was seen by the writer on Fox Prairie, in Richland Co., on the 19th of August, 1871.* It several times came so near that its peculiar markings could be seen with perfect distinctness, and the writer having previously handled many stuffed specimens there cannot be the slightest doubt as to the correctness of its identification.

*See *American Naturalist*, July, 1872, p. 430, and April, 1873, p. 201.

BIRDS OF ILLINOIS.

GENUS BUTEO CUVIER.

ANAT. COMP. I, 1800, tabul. ois. Type, *Falco buteo* Linn.
 D. VOY. HENG. BIRDS, 1841, 22. Type, *Polyborus galapagoensis* GORLL.
 KAUP. CLASS. SAUG. VOG. 1844, 143. Type, *Falco plebejus* TEMM. =
audatus VIEILL.
 KAUP. ISIS, 1849, 329. Type, *Falco pennsylvanicus* WILS.
 COMPT. REND. XII, 1855, 651. Type, *Buteo brachyurus* VIEILL.

Form robust and heavy; the wings long and rather pointed, the tail added, the bill and feet strong. Bill intermediate between that of *Astur* and *Falco*. Wing long and rather pointed, the third to fifth quill longest, the eighth; three or four with inner webs emarginated. Tail moderate,

primaries with inner webs emarginated.
 Middle toe more than twice as long as the middle toe.

MALE. Tail always dusky, crossed by white or buffy narrow bands; outer primaries, anterior to their emarginations, more or less spotted with braccous. ADULT. Lower parts rufous (varying in intensity), more or less transversely spotted with white. Front sometimes nearly uniform and primaries slate black, the former barred, the latter spotted on the inner webs with pure white, lesser wing coverts dark rufous or chestnut. YOUNG. Dull whitish or buffy, longitudinally striped with dusky. Primaries brownish dusky, the former crossed by narrow bands of pale grayish yellow, or dull whitish, the latter spotted towards base with the same. MALE. Wing, 13.50; tail, 7.70-9.70; tarsus, 2.70-3.25. FEMALE. Wing, 13.50-14.25; tail, 7.50-8.50; tarsus, 3.10-3.20.

Form decidedly more robust.

MALE. Tail, rufous in adult, brownish gray banded with black, in young; of primaries without light spotting. ADULT. Lower parts varying from white, with a few dusky markings on abdomen and flanks, to dusky.

brownish black. (Palest-colored specimens nearly or quite free from spots beneath; melanistic examples with dusky prevailing.) *Male*: Wing, 13.70-15.25; tail, 7.00-9.00; tarsus, 2.10-2.65. *Female*: Wing, 14.75-16.50; tail, 8.80-9.00; tarsus, 2.50-2.70.

5. *B. latissimus*. Size small (wing less than 12 inches), the tips of the closed wings reaching only to the middle of the tail. *Adult*: Tail dusky, crossed by 2-4 broad bands of light brownish gray or brownish white, and narrowly tipped with whitish. Upper parts nearly uniform dusky brown, darker on the back; lower parts dull rufous brown varied by white spotting, the latter color prevailing posteriorly. *Young*: Tail grayish brown, crossed by about 5-7 narrow bands of dusky and tipped with whitish. Side of head and entire lower parts white or pale buff, relieved by a more or less distinct dusky "mustache;" a dusky streak down middle of throat, and various longitudinal markings of the same color on breast, sides, etc. *Male*: Wing, 9.85-10.70; tail, 6.50-7.00; tarsus, 2.15-2.80. *Female*: Wing, 11.00-11.40; tail, 7.00-8.00; tarsus, 2.20-2.80.

Buteo borealis (Gmel.)

RED-TAILED HAWK.

a. borealis. Eastern Red-tailed Hawk.

Popular synonyms. Chicken Hawk; White-breasted Chicken Hawk; Common Chicken Hawk or Hen Hawk.

Falco borealis GMEL. S. N. i, 1788, 266.—WILS. Am. Orn. i, 1808, pl. 52, fig. 1.—AUD. B. Am. i, 1831, pl. 51; Orn. Biog. i, 1831, 265.—NUTT. Man. ed. 2, i, 1840, 102.

Buteo borealis VIEILL. 1816.—NUTT. Man. i, 1832, 122.—AUD. Synop. 1839, 6; B. Am. i, 1840, 32, pl. 7.—CASS. in Baird's B. N. Am. 1858, 25.—BAIRD, Cat. N. Am. B. 1859, No. 23.—COUES, Key, 1872, 216; Check List, 1874, No. 351; 2d ed. 1882, No. 516; B. N. W. 1874, 352.—RIDGW. Nom. N. Am. B. 1881, No. 436.

Buteo borealis var. *borealis* B. B. & R. Hist. N. Am. B. iii, 1874, 282.

Falco leverianus GMEL. S. N. i, 1788, 266 (=young).—WILS. Am. Orn. i, 1808, pl. 52, fig. 2.—AUD. Orn. Biog. i, 1831, 265.

HAB. Eastern North America to and including the Mississippi Valley; north to the Fur Countries, south through eastern Mexico to Guatemala.

b. calurus. Western Red-tailed Hawk.

Popular synonym. Black Red-tail.

Buteo calurus CASS. Proc. Phil. Acad. vii, 1855, 281; in Baird's B. N. Am. 1858, 14; 1b. ed. 1860, pl. 14.—BAIRD, Cat. N. Am. B. 1859, No. 20.

Buteo borealis var. *calurus* RIDGW. 1873.—B. B. & R. Hist. N. Am. B. iii, 1874, 286.

Buteo borealis b. *calurus* COUES, B. N. W. 1874, 356.

Buteo borealis calurus RIDGW. Nom. N. Am. B. 1881, No. 436b.—COUES, 2d Check List, 1882, No. 517.

Buteo montanus "NUTT." CASS. in Baird's B. N. Am. 1858, 26 (nec. NUTT.).—BAIRD, Cat. N. Am. B. 1859, No. 24.

HAB. Western North America, from Rocky Mountains to the Pacific; north to Sitka, Alaska; south to southern Mexico.

c. krideri. Krider's Red-tailed Hawk.

Popular synonyms. White Red-tailed Hawk; White Hen Hawk or Chicken Hawk.

Buteo borealis var. *krideri* HOOPES, Proc. Phil. Acad. 1873, 283, pl. 5 (= young).—B. B. & R. Hist. N. Am. B. iii, 1874, 284.—COUES, Check List, 1874, No. 351c.

Buteo borealis d. *krideri* COUES, B. N. W. 1874, 353.

Buteo borealis krideri RIDGW. Nom. N. Am. B. 1881, No. 436.—COUES, 2d Check List, 1882, No. 519.

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n border of the Great Plains, from Minnesota to central Texas. Third to fifth quill longest, the first always shorter than a seventh (some-
times four outer quills with inner webbed distally emarginated). Tarsus less
long as middle toe. *Adult.* Tail rufous, darker on sides whitish at tip,
marked by a subterminal narrow band of black. It is with the rest less dis-
tinct of other narrow bars. Upper parts blackish brown, sometimes much
less, nearly uniform on the back, elsewhere broken by more or less of
barring and spotting. Occipital feathers grayish at the base but
edged with buff or buff. Wings with indistinct lighter grayish brown
of the remiges distinctly under. Lower parts varying from nearly pure
dark spots across the abdomen to almost uniform blackish brown. Un-
dermines plain white anterior to the remarginations. *Young.* Tail gray,
marked by 9 or 10 narrow but usually sharply defined bands of blackish;
as much as in the adults but with less rufous.

characters cover the extreme variations in the plum-
ages that have come under my notice. The species
vary to a great extent individually, but also geographi-
cally, the style of plumage prevailing in separate geographical
country. The following geographical races are fairly
distinct:

- a. dusky or rufous prevailing on lower parts; tail of adult usually with
continuous dusky bar, sometimes with none.
- b. Upper parts with dark brownish largely prevailing; abdomen and
flanks with conspicuous dusky spots. Tail deep rufous usually with a dis-
tinct subterminal bar of black.
- c. Upper parts with much white spotting; lower parts almost wholly
white, with little or no dark spotting on abdomen and flanks. Tail light rufous,
usually without a subterminal bar.

white; tibiæ and lower tail-coverts immaculate; across the abdomen and flanks (immediately in front of the tibiæ) is a broad interrupted belt of longitudinal black blotches, those on the abdomen tear-shaped, on the flanks larger and more irregular, throwing off bars toward the edge of the feathers; whole pectoral area variegated only with a few shaft-streaks of black (these growing broader laterally), and sometimes washed with rusty. Lining of the wing ochraceous white, with sparse diamond-shaped spots of pale rufous, and shaft-streaks of darker; under surface of primaries white anterior to their emargination, beyond which they gradually deepen into black; the innermost ones are finely mottled with slaty, and with imperfect transverse bars of the same.

Male. Wing, 13.50-16.50; tail, 8.50-10.00; culmen, .95-1.08; tarsus, 1.40-3.20; middle toe, 1.60-1.70. Weight, 2½-3 lbs.

Female. Wing, 15.25-17.75; tail, 9.50-10.50; culmen, 1.00-1.15; tarsus, 3.15-3.40; middle toe, 1.70-1.80. Weight, 3-4 lbs.

Young (No. 28,154, Philadelphia, J. Krider). Above similar to the adult, but lacking entirely any rufous tinge, the scapulars and wing-coverts more variegated with whitish. Tail light grayish brown (very much lighter than the rump), tinged, especially basally, with rufous, narrowly tipped with white, and crossed with nine or ten narrow, curved bands of black; upper tail-coverts white, with broad bars of black. Head as in the adult, but the rufous wanting, leaving the streaks black and white; forehead more broadly white; chin and throat wholly white, the latter with a collar of dusky streaks across the lower part; whole pectoral region entirely immaculate, pure white; abdominal band as in the adult; tibiæ somewhat tinged with ochraceous, unvariegated.

In its typical form, *B. borealis* may usually be distinguished from the lighter-colored examples of *B. borealis calurus* by having the posterior lower parts (tibiæ and lower tail-coverts) free from transverse bars or other markings, and in the absence of transverse bars on the tail anterior to the usual subterminal one. These differences are by no means absolutely constant, however, since, while eastern specimens occasionally occur which have these parts more or less distinctly barred, western specimens with the same parts immaculate are sometimes found. Such, however, are in either case exceptional.

Young birds from the eastern side of the continent occasionally have the tibiæ more or less barred or spotted, but usually such markings, if present, are either small or faint in color compared with western specimens of corresponding age.

b. calurus.

SUBSP. CHAR. *Adult.* Similar to *borealis*, but darker, or with more rufous and blackish in the plumage; tibiæ usually distinctly barred with rufous, or else nearly uniform rufous or dusky; throat usually with dusky prevailing, sometimes wholly of this color. Tail frequently with more or less distinct indications of numerous blackish bars. In melanistic individuals, which are not uncommon, the whole plumage nearly uniform sooty black or dark brown, the breast, however, usually paler, sometimes rufous or ferruginous. (Between this plumage and the lightest-colored individuals every possible intermediate coloration occurs.) *Young.* Much darker than the corresponding stage of *borealis*. In melanistic specimens, whole plumage blackish brown, varied only with fulvous edgings to the feathers and concealed white spotting; the tail grayish brown, with about nine broad black bars. In the lighter-colored individuals, the tibiæ with very distinct—usually heavy—transverse spots of dusky.

Adult male (five specimens from Nevada, collected by the author). Total length, 21.50-23.00 inches; extent, 49.00-53.00; weight, 2-3 pounds. Bill dull black terminally, light bluish basally; cere and rectus greenish yellow; iris deep hazel in some specimens, light yellow in others, in two specimens yellow on upper portion and brown below; legs and feet light yellow; claws black.

Adult female (five specimens from Nevada, collected by the author). Total length, 23.00-24.00 inches; extent, 51.00-55.00; weight, 3-4 pounds. Fresh colors as in the above-mentioned males. Iris Naples yellow in one very black melanistic individual, deep hazel in a rufous-breasted melanistic specimen, and hazel in three light-colored examples.)²

The young bird of this western style is usually as different from that of the eastern as is the adult, and the essential differences are about the same,—i. e. darker colors, or a predominance, or rather, increase in size, of the dark markings. The numerous heavy transverse spots on the tibiae constitute a marked feature of the average young *calurus*, as compared with the almost, or sometimes entirely, immaculate white of those in *borealis*.

c. krideri.

SCHEP. CHAR. *Adult.* Similar to *borealis*, but beneath continuous pure white, without rufous tinge, and without distinct spots across the abdomen, or lacking them entirely; above much lighter, the brown, light rufous, and white being about equal in amount. Upper tail-coverts immaculate white; tail pale rufous, the shafts pure white, and the webs mixed with white along their edges, its amount increasing toward the base; no trace of a dusky subterminal bar, or else only indicated by badly defined spots.

Young. Differing from that of var. *borealis* in the immaculate, snowy white lower parts, nearly equal extent of the white and dusky on the upper parts, and whitish cast of the tail.

This fine bird, although far less numerous than the Red-shouldered Hawk (*B. lineatus*) is yet very common in most portions of the country. According to Mr. Horace A. King (in *Ornithologist and Oologist*, Vol. IX., July, 1884, p. 81), "One of the com-

Two eggs of this species, unusually large and entirely free from markings, were obtained by the writer at Mount Carmel, on the 6th of March, 1867, and are now in the collection of the National Museum at Washington. The nest was on the summit of a tall black gum tree (*Nyssa sylvatica*), about ninety feet from the ground.

The claim of the western race of the Red-tailed Hawk rests on the capture of a single specimen "near Chicago in April, 1873," by Mr. C. H. Smith, as recorded by Mr. Nelson in his list, p. 119.

The occurrence in Illinois of the very strongly marked race known as Krider's Red-tailed Hawk, is verified by a specimen presented to the United States National Museum, by Mr. H. K. Coale, and obtained July 25, 1876, on the bank of the Des Plaines River, about 34 miles northwest of Chicago.

Buteo harlani (Aud.)

HARLAN'S HAWK.

Popular synonyms. Black Warrior; Harlan's Buzzard.

Falco harlani AUD. B. Am. i, 1831, pl. 36; Orn. Biog. i, 1831, 441.

Buteo harlani BP. 1833.—AUD. Synop. 1839, 6; B. Am. i, 1840, 38, pl. 8.—CASS. in B. N.

Am. 1858, 24 (part; not desc. of supposed young, which=*B. borealis calurus*!).

—BAIRD, Cat. N. Am. B. 1859, No. 22.—COUES, Key, 1872, 216; Check List, 1874, No. 350;

2d ed. 1882, No. 515; B. N. W. 1874, 352.—B. B. & R. Hist. N. Am. B. iii, 1874, 292.

—RIDGW. Nom. N. Am. B. 1881, No. 438.

Buteo cooperi CASS. Proc. Acad. Nat. Sci. Phil. 1856, 253.

HAB. Southern portion of Mississippi Valley, from Louisiana and Texas, to southern Illinois and eastern Kansas; New Mexico; Pennsylvania? eastern Mexico? Guatemala.

a. Light phase.

Adult (No. 8,525, Santa Clara, California, October, 1856: Dr. J. G. Cooper. Type of *B. cooperi* Cass). Head, neck, and whole lower parts white; feathers of the head and neck with median longitudinal streaks of black, the white prevailing on the occiput and superciliary region, the black predominating over the cheeks, forming a "mustache"; throat with fine lanceolate blackish streaks; sides of the breast with broader, more cuneate markings of the same; flanks with narrow, lanceolate stripes, these extending sparsely across the abdomen; tibiae, and lower tail-coverts immaculate, the inner face of the former, however, with faint specks. Upper plumage in general dark plumbeous brown, inclining to black on the back; plumbeous clearest on primaries, which are uniformly of this color, the inner ones inclining to fine cinereous. Scapulars and wing-coverts spattered with white beneath the surface. Rump black; upper tail-coverts white tinged with rufous, and with irregular distant transverse bars of blackish. Tail with light rufous prevailing, but this broken up by longitudinal daubs and washes of cinereous, and darker mottlings running longitudinally on both webs; basally the ground color approaches white; tip white, and a distinct, but very irregular, subterminal band of black, into which the longitudinal mottlings melt; outer webs of lateral feathers entirely cinereous, and without the black band. Under side of the wing white with a large black space on the lining near the edge; under surface of primaries white anterior to their emargination, finely mottled with ashy, and with indistinct transverse bands terminally. Fourth quill longest; third shorter than fifth; second equal to sixth; first equal to tenth. Wing, 15.75; tail, 9.10; tarsus, 3.25; middle toe, 1.70.

Adult female.—No. 99,929, U. S. Nat. Mus., Gainesville, Texas; G. H. Ragsdale). Head and neck above white, each feather marked with a central guttate or acute-ovate spot of dusky brown, the whole under surface of the plumage, however, pure white. Back and scapulars mixed brownish gray, dusky brown, and white, in nearly equal proportion, the whole underlying portion of the feathers white; lesser and middle wing-coverts nearly uniform dusky brown, with a faint purplish gloss; greater coverts grayish brown, transversely spotted, or irregularly barred, with dusky, the concealed basal portion white; secondaries similar, but darker terminally, and narrowly tipped with white; primaries grayish brown, darker toward ends, indistinctly mottled with darker or lighter, the shorter quills with decidedly, though not abruptly, paler tips. Upper tail-coverts white, marked with an irregular subterminal blotch of dusky brown continued, irregularly, along the shaft, the inner webs of some of them stained with ochraceous. Tail white, the outer webs of all the feathers confusedly mottled, chiefly near the edges, with brownish gray, these mottlings more coalesced, and also darker in color, near the end of the feathers, so as to suggest a poorly defined subterminal darker band; inner webs of all the rectrices, also the shafts, entirely white. Head, neck, and entire lower parts white, the first finely streaked laterally with dusky, the throat more broadly streaked, and from the rictus backward a broad stripe of dusky, formed of coalesced guttate streaks or spots, which at the lower part of the throat extend across, forming a narrow interrupted band; sides of jugulum marked with guttate spots of dusky brown; flanks and lower part of abdomen marked with guttate and lanceolate spots or streaks of very dark brown; front and inner sides of tibiae sparsely and irregularly marked with clear grayish brown; whole breast, anal region, and crissum, immaculate. Lining of wing white, sparsely and irregularly spotted with dusky, thus forming a patch on the anterior under wing-coverts; under surface of primaries, anterior to their emargination, faintly, sparsely, and irregularly mottled with grayish. Wing, 16.25; tail, 10.00; culmen, 1.10; tarsus, 2.65, the bare portion in front 1.55; middle toe, 1.75.

b. Dark phase.

Adult male (Lawrence, Kansas, October, 1871; in collection of Kansas University). General color deep, almost carbonaceous, black, showing much exposed white on the head, neck, and breast, all the feathers of which are snowy white beneath the surface, the black being merely in the form of tear-shaped spots on the terminal portion of the feather; chin, lores, and front pure white, upper parts in general, the posterior lower parts, and the lining of the wing, with the black unbroken, but all the feathers—except the under wing-coverts—more or less spotted with white beneath the surface, on a grayish ground, these spots being usually arranged in pairs on each side of the shaft, on the flanks, tail-coverts, above and below spotted irregularly with bright rufous, in nearly

lining of the wing and upper tail-coverts, continuous, unvariegated black. Under surface of the primaries ashy white, more slaty terminally; ends with distinct, and other portions with indistinct, mottled bars of dusky. Tail ashy brown on outer webs, white on inner; both with a confused, rather longitudinal mottling of blackish; terminally, there is a broad, nearly continuous subterminal band indicated by blotches, these mixed very slightly with a rufous tinge. Primaries injured by shot, therefore proportions of the quills cannot be determined. Wing, 15.75; tail, 9.10; culmen, 1.00; tarsus 2.90; middle toe, 1.60; outer, 1.15; inner, 1.15.

Young male (Gainesville, Texas, Nov. 16, 1876: G. H. Ragsdale*). Prevailing color dark sooty brown, nearly black, the entire plumage white beneath the surface, showing wherever the feathers are disarranged. Throat white, with a few streaks of sooty brown; lores whitish. Scapulars and larger wing-coverts with large concealed bars and spots of white; feathers of the rump, upper tail-coverts, flanks, tibiae and crissum with indistinct roundish spots of pale fulvous, pale grayish brown and dirty white, on the edges of the feathers, the continuity of the dusky ground-color being thus broken. Remiges grayish brown, with distinct bands of sooty black, with a purplish reflection, these bands averaging about .50 of an inch in width, .60-.75 apart; on the secondaries they are three in number, exclusive of those concealed by the greater coverts and the very indistinct terminal one; rectrices similar to the remiges, but the black bars nearly equal in width to the interspaces (both averaging about .45 of an inch in width), and seven in number on the intermediate (not counting the nearly obsolete basal one); on the inner webs of the intermediate these bars are less regular, those toward the end of the feathers being decidedly zigzag and oblique; inner webs mottled with grayish next the shaft, white toward the edge, the bars narrower and more conspicuous than on the outer webs. Lining of the wing and axillars blackish dusky, irregularly spotted with white and pale fulvous; inner webs of primaries white anterior to their emarginations, this white relieved, however, by an irregular clouding and sprinkling of grayish.

Fourth quill longest; third and fifth, .35 of an inch shorter, and equal; second, 1.60; shorter than the fourth, and exceeding the sixth in length; first, 4.25 shorter than the fourth, and intermediate between the eighth and ninth.

Wing, 16.20; tail, 10.00; culmen, .98; tarsus, 3.50; middle toe, 1.70; outer toe decidedly longer than the inner.

The specimen last described calls to mind at first sight the young of *Buteo abbreviatus*, on account of the numerous white spots which show wherever the feathers are disarranged. It is, however, more spotted below, and the general cast of the plumage is decidedly more brownish; while the proportions are, of course, entirely different. From melanistic young specimens of *B. borealis*, it differs in the conspicuous white spotting alluded to, in the decidedly greater width and distinctness of the black band of the remiges and rectrices, as well as the more hoary cast of the interspaces between the latter—especially on the *intermediae*.

"This species, though smaller than the Red-tail, to which he regarded it as allied, Audubon thought greatly superior to it in flight and daring. Its flight is described as rapid, greatly protracted, and so powerful as to enable it to seize the prey with apparent ease, or effect its escape from its stronger antagonist, the Red-tail,

* This specimen was, at last accounts, in the collection of Dr. R. M. W. Gibbs, of Kalamazoo, Mich. (Cf. *The Naturalist and Fancier*, Grand Rapids, Mich., Vol. I., No. 8, August, 1877.)

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ed it on all occasions. It had been seen to pounce, kill it almost instantly, and afterward drag it along several hundred yards. It was not seen to prey on irrels, but seemed to evince a marked preference for ridges, and the smaller species of wild duck. He saw young, but was told that they appeared to be of a color at a distance, and at the approach of winter look as their parents." (*Hist. N. Am. B.* Vol. III., pp.

A male of this rare species was taken by Mr. Chas. near Warsaw, Hancock county, in March, 1879. "Two were seen at the time, flying up the Mississippi river, following the flight of water-fowl which were then common in great numbers."

Buteo lineatus (Gmel.)

RED SHOULDERED HAWK.

Yms. Hen Hawk; Chicken Hawk

GMEL. S. N. I. 1788, 268. — WILS. Am. Orn. I. 1808, pl. 53, fig. 3. — AUD. Orn. 51, 226

48 JARD 1852. — AUD. Synop. 1839, 7. — CASS. in Baird's B. N. Am. 1858, 28.
it. N. Am. B. 1869, No. 25. — COUES. Key, 1872, 217. — CHECK. List, 1874, No. 353;
2, No. 530; B. N. W. 1874, 854. — B. B. & B. Hist. N. Am. B. III, 1874, 275 (var.).
— RIDGW. Nom. N. Am. B. 1881, No. 479.

is clearest being pale rufous, bordered with dusky, but as the white grows more silvery they darken into black; the longest (fourth) has eight of these spots, including the sub-terminal, very broad one. Fourth quill longest; fifth, just perceptibly shorter; third, a little shorter; second, considerably longer than sixth; first equal to ninth. Wing, 13.00; tail, 8.50; tarsus, 2.90; middle toe, 1.33.

Adult female (No. 11,991, Washington, D. C.: Dr. W. Wallace). Generally similar to the male, but rufous more extended, this tinging the outer webs of secondaries and primaries. On the under parts the rufous is rather deeper, and the tibiae are strongly barred, and even the lower tail-coverts have obsolete spots of the same. Wing, 13.75; tail, 9.00; tarsus, 2.90; middle toe, 1.50.

Young male (No. 1,210). Ground color of head, neck, and under parts white; feathers of head and neck with median stripes of dark clear vandyke-brown, leaving a superciliary space, and the ear-coverts scarcely striped; a blackish suffusion over cheeks, forming a "mustache," and large longitudinal spot of the same on middle of throat; breast, abdomen, sides, and flanks, with rather sparse, irregularly sagittate spots of clear vandyke-brown, those on the sides of breast more longitudinal; tibiae with a faint ochraceous tinge, and with sparse, small, and irregular specks of brown; lower tail-coverts with a very few distant isolated bars of the same. Upper parts generally, clear dark vandyke-brown; interscapulars and wing-coverts edged (most broadly beneath the surface) with pale rufous; middle wing-coverts with much white spotting on upper webs, partially exposed; wing-coverts generally, and scapulars, narrowly bordered with white; secondaries narrowly tipped with white, and crossed with about four (exposed) bands of paler grayish brown; primaries inclining to black; faintly margined at ends with whitish; outer webs anterior to the emargination, rufous white, with distant, narrow bars of blackish, these widening on inner quills; upper tail-coverts white with transverse spots of blackish. Tail dark vandyke-brown, narrowly tipped with white, and crossed with numerous narrow bands of pale grayish brown, these obsolete towards the base. Lining of the wing pale ochraceous, with a few irregularly cordate spots of dark brown toward edge of wing; under surface of primaries mostly white, the dusky bars not extending across the web, except on inner quills. Wing, 13.25; tail, 9.30; tarsus, 2.85; middle toe, 1.40.

Young female (No. 11,994, Washington, D. C., January: C. Drexler). Almost precisely similar; tibiae unspotted; light bands of the tail more sharply defined basally, and pale mottled rufous, instead of pale ashy brown. Wing, 14.50; tail, 9.60; tarsus, 3.10; middle toe, 1.45.

This is decidedly the most numerous of the larger hawks in most portions of Illinois, especially in the timbered districts. It does not differ much in its habits from other species, except that it is a very noisy bird, its very loud but plaintive and not unmusical cry of *kee'-oe, kee'-oe, kee'-oe*, being frequently heard, especially during the breeding season, most often uttered as the bird sails in broad circles high over the tree-tops. The food of the Red-shouldered Hawk consists chiefly of frogs, reptiles, and field mice, but it occasionally, like others of its tribe, makes a descent upon the poultry-yard.

- Buteo swainsoni* BP. Comp. List, 1838, 3.—Cass. in Baird's B. N. Am. B. 1859, No. 18.—COUES List, 1874, No. 354; 2d ed. 1882, No. 523; B. N. W. 1874, 355.—B. iii, 1874, 263.—RIDGW. Nom. N. Am. B. 1881, No. 442.
- Buteo montanus* NUTT. Man. ed. 1840, i, 112.
- Buteo bairdii* HOY, Proc. Phil. Acad. 1853, 451 (= young).—CASS. Baird's B. N. Am. 1858, 21.—BAIRD, Cat. N. Am. B. 1859, No. 11.
- Buteo insignatus* CASS. Illustr. 1854, 102, 198, pl. 41 (= melanistic pl. Am. 1858, 23).—BAIRD, Cat. N. Am. B. 1859, No. 21.
- Buteo oxypterus* CASS. Proc. Phil. Acad. vii, 1855, 282 (= young); 1858, 30; ib. ed. 1860, pl. 15, fig. 2.—BAIRD, Cat. N. Am. B. 1859, 1872, 218.

Buteo swainsoni var. *oxypterus* B. B. & R. Hist. N. Am. B. iii, 11

HAB. Western North America, north to the Yukon and McKer south to Central America (Guatemala and Costa Rica), east to the (Illinois, Wisconsin, Arkansas, etc.); occasional visitant further north of the Great Lakes and St. Lawrence. Massachusetts (Brewer) over South America, as far as Patagonia, Argentine Republic, and M

SP. CHAR. Only three outer primaries with inner webs emarginate (usually the third) quill longest; first shorter than the sixth (usually rarely shorter than—the seventh). Wing reaching nearly to the end of the secondaries by about one third the length of the wing versus scutellæ on front of the tarsus, 9-13. Color: tail grayish brown times with a hoary cast, usually passing narrowly into whitish at the an indefinite number of very indistinct narrow bands of a darker shade portions extremely variable. *Adult.* Nearly uniform dusky brown concealed bases of occipital feathers, and the upper tail-coverts more white; beneath sometimes pure white, with a broad patch of uniform on the breast, and white throat-patch, but from this light extreme to uniform dusky chocolate or sooty brown, through intermediate shades or rufous upon which ground deeper colored bars are visible on the pectoral patch; very rarely the lower parts are irregularly spotted the pectoral patch is broken up into similar spotting by the admixture of white. In the extreme melanistic condition the bird is uniform with white bars on the crissum. *Young.* Ochraceous and purplish quantities varying according to the individual; the ochraceous form and usually predominates, but is sometimes much less in amount than tail is the same as in the adult.

a. Normal phase.

Adult. Above continuous blackish brown, the feathers usually with borders; outer scapulars and upper tail-coverts very rarely tinged with usually more or less barred with white or ashy; occipital feathers white; primaries plain brownish black, without trace of the

dark brown or rufous—very rarely immaculate; crissum usually immaculate, but sometimes with faint and distant bars. Lining of the wing white, sometimes tinged with ochraceous, often immaculate, but generally sparsely (never heavily) spotted with rufous or brown. Under surface of the primaries cinereous (the outer two or three more whitish) sometimes plain, sometimes indistinctly barred with darker. *Male*. Breast-patch rufous with darker shaft-streaks. *Female*. Breast-patch dark grayish umber, or blackish brown (like the back).

Young. Above brownish black, with a faint purplish lustre, the feathers all paler on their borders; wing-coverts and scapulars more or less variegated with ochraceous or whitish spotting, this usually very conspicuous on the longer scapulars; upper tail-coverts ochraceous or whitish (their inner webs more brownish), barred with dusky. Tail as in adult. Ground color of the head, neck, and lower parts, ochraceous, varying in shade from very deep cream-color to nearly white; the feathers of the head, neck, anterior part of the back, and sides of the breast with median longitudinal tear-shaped spots of brownish black; lower parts generally spotted, sometimes everywhere, with black, and occasionally immaculate.

b. *Melanistic phase.*

Adult. Prevailing color plain blackish brown; the tibiae, lining of the wings, and sometimes the breast, inclining more or less to rufous. Crissum usually white, sometimes immaculate, generally barred with rusty or blackish; occasionally with dusky and whitish bars of equal width. No white on the throat, or else but little of it. *Young*. Brownish black, variegated with ochraceous spotting, in amount varying with the individual.

This, being a western species, here reaching the normal eastern limit of its range, is one of the rarer species in Illinois. The writer has never identified it with certainty anywhere in Wabash or adjoining counties; but Mr. Nelson found it breeding on Fox Prairie, in Richland county, during the summer of 1875, and obtained specimens.

In his list of the birds of northeastern Illinois (p. 119), Mr. Nelson records the following as to its occurrence in that portion of the State:

"Of rather rare occurrence in this vicinity. Have only noted it during the migrations. I obtained an immature specimen May 30, 1875, at Riverdale, Ill., and have since seen others. As this species breeds in southern Illinois it probably also breeds in the northern portions of the State."

BIRDS OF ILLINOIS.

Buteo latissimus (Wils.)

BROAD WINGED HAWK.

adult Wils. Am. Orn. vi, 1832, 92, pl. 54, fig. 1. (not plate 46, fig. 1, which is *clay*, young) —AUD. B. Am. i, 1831, pl. 91, Orn. Ring. i, 1839, 461. NUTT, 105.

juvencus Br. 1830. AUD. Synop. 1839, 7, B. Am. 1840, 43, pl. 19. CARR. In N. Am. 1858, 29. BAIRD Cat. N. Am. B. 1859, No. 27. COOPER. Key 1872, List, 1874, No. 355; 2d ed. 1882, No. 524, B. N. W., 1874, 366.—B. B. & H. Hist., i, 1874. RIDG. N. A. N. Am. B. 1881, No. 443.

♂ WILS. Am. Orn. vi, 1832, 92, pl. 54 fig. 1.

us SHARPE, Cat. B. Br. Mus. i, 1874, 193.

North America, north to Hudson's Bay; eastern Middle America and Venezuela, and upper Amazon, Cuba resident, and other West

alt Upper surface dark amber brown, the feathers gradually paler to the back the feathers more uniformly dusky, causing a prevalent effect. Rump and upper tail-coverts blackish-vandyke-brown, the latter white, and with a concealed bar of the same, about the middle of each black, with an indistinct terminal band of dull brown, this fading to ash; across the middle of the tail a broad band of dull light amber in approaching dull white about three-fourths of an inch in width; about the main band as thick as from tip to another much narrower and less same color, crossing just beyond the ends of the coverts, or con- Primaries uniform brownish black, fading on the terminal edge into above, and broad at the conspicuous "moustache," coming from the across the cheek, dull black; the crown posteriorly, with the occiput the dull black much broken by lateral streaks of dull rufous on all the rufous tint prevails on the rest of the head and neck as well as the lores and chin and lateral portion of the frontlet alone whitish, throat irish. Beneath dull brownish rufous, that of the breast almost unvarie-

Measurements.

	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.	Specimens.
Male	9.85-10.70	6.50-7.00	.70 ...	2.15-2.80	1.20-1.38	11
Female	11.00-11.40	7.00-8.00	.70-.78	2.20-2.70	1.30-1.40	14

"Audubon characterizes this Hawk as spiritless, inactive, and deficient in courage, seldom chasing other birds of prey, but itself frequently annoyed by the little Sparrow-Hawk, the Kingbird and Martin. It only attacks birds of a weak nature, young chickens and ducklings, and feeds on small animals and insects. It is usually found singly, is easily approached, and when wounded throws itself on its back, erects its top feathers, utters a hissing sound, and attempts to defend itself with its talons.

"A nest of this bird, found by Mr. Audubon, is said to have been about the size of that of the Crow, and to have been placed in the larger branches of a tree, near the trunk. It was composed externally of dry sticks and briars; internally, of small roots, and lined with numerous large feathers. The nest found by Professor Adams, near Middlebury, Vt., was quite large, and was coarsely constructed of sticks, and lined only with fibrous roots and fine grass. In this instance the eggs were three. This is the more usual number, though occasionally four or five are found." (*Hist. N. Am. B.*)

GENUS **ARCHIBUTEO** BREHM.

Archibuteo BREHM, Isis, 1828, 1269. Type *Falco lagopus* GMEL.

CHAR. Similar to *Buteo*, but bill and feet weaker, wings longer, and tarsi feathered in front, to the toes. Bill small, compressed anteriorly, but very broad through the gape; upper outline of the cere ascending basally; nostril broadly oval, nearly horizontal. Tarsus densely feathered in front and on the sides down to the base of the toes; naked behind, where covered with irregular scales. Tarsus more than twice as long as the middle toe; basal half of the toes covered with small scales; outer toe longer than the inner; claws long, strongly curved, acute. Feathering of the head and neck normal. Wing very long; the third to fourth quill longest; first shorter than seventh; outer four or five with inner webs deeply emarginated. Tail moderate, rounded. Plumage full and soft.

The relationship of this well-marked genus appears to be nearest to *Buteo* and *Circus*, with an approach to *Circæetus* in character of the plumage, especially the wing.

The two North American species are exceedingly distinct and may readily be separated by the following characters:

BIRDS OF ILLINOIS.

sancti johannis. Bill comparatively narrow at the base and compressed.

Tarsus not more than 3 inches. Breast never immaculate white, no upper parts or tibia. *Adult.* Tail with several bands. *Light phase* prevailing, this much broken however, by dusky spotting, the spots increased on pectoral region. *Metanestic phase* sometimes buff or buff to commonly dark brownish with white lines, white under side of light grayish or white narrow band on tail. *Young.* Terminal half tail grayish brown, white at base, basal portion white (usually unvaried), the grayish brown above with dusky streaks and fulvous or buff edgewise ochraceous or buff whitish the belly and flanks usually dark breast streaked with brown. *Metanestic specimens* blackish brown, nearly uniform, but usually more or less streaked with fulvous edgewise feathers. *Male.* Wing, 15.75 to 20; tail, 9.00 to 10.00; tarsus, 2.75 to 3.00; leg, 16.15 to 18.00; tail, 9.00 to 11.00; tarsus, 2.80 to 3.00.

Female. Bill very broad and somewhat depressed, at the base, the gape striastral. Tarsus more than 3 inches. Breast usually immaculate as in melanistic specimens, upper parts and tibia rich rufous in *light phase*. Upper parts and tibia buff rufous, the former with 12 stripes or spots, the latter with transverse bars of dusky. Tail white, dusky, and more or less stained with light rufous. *Metanestic phase* color deep chocolate-brown, more or less varied with rufous, tail as *phase*. *Young, light phase.* Above grayish brown the feathers edged with buff or fulvous; tibia white usually more or less barred with dusky; only on basal portion and on upper web the terminal half or more brown, usually with several more or less distinct darker bars. *Male.* 17.00, tail, 9.50 to 10.00, tarsus, 3.10 to 3.40. *Female.* Wing, 17.00 to 18.50; tail, tarsus, 3.20 to 3.40.

hibuteo lagopus sancti-johannis (Gmel.)

AMERICAN ROUGH LEGGED HAWK.

1. Black Rough-leg; Black Hawk.

each marked with an exceedingly irregular transverse spot of black. Tail white on basal two thirds, and narrowly, but sharply tipped with the same; subterminal portion pale mottled cinereous, with a very broad zone of black next the terminal white, and anterior to this three narrowed and more irregular bands of the same. Primaries blackish cinereous, with indistinct darker bands. Ground color of head and lower parts dull white; cheeks thickly streaked with black; ear-coverts and throat more sparsely streaked; forehead and sub-orbital region plain whitish. Breast with large, longitudinal but very irregular, oblong spots of dark brown, these largest and somewhat confluent laterally; lower part of breast with much less numerous and less longitudinal spots; tibiae strongly tinged with rusty, and with tarsus, abdomen, crissum, and flanks having irregular transverse spots of blackish brown; lower tail-coverts unvariegated. Lining of wing white, with numerous spots of black, these becoming more rusty towards the axillars; a large space of continuous clear black, covering the under primary coverts and the coverts immediately anterior; under surface of primaries and secondaries pure white, the former becoming black at ends, the latter ashy; no bars, except toward shafts of the latter. Fourth quill longest; third equal to fifth; second intermediate between fifth and sixth; first equal to eighth. Wing, 16.50; tail, 9.00; tarsus, 2.50; middle toe, 1.30; bill from base of cere, 1.30; culmen, .90.

Adult female (No. 28,156, Philadelphia, Pa.: J. Krider). Generally similar to the male. On head and nape, however, the yellowish white predominates, the central black being much reduced; on the other hand, there is less white on the upper parts, the dull cinereous drab being much more evenly spread; darker markings less conspicuous. Tail white only at the base, the remaining portion being pale cinereous drab crossed with four or five distinct, very regular bands of black, the tip being very broadly ashy. Flanks with ground color light umber-drab, and marked with transverse bands of black. Lower surface generally as in the male; tail-coverts with two or three blackish spots, apparently out of place. Fourth quill longest; fifth much shorter than third; second intermediate between fifth and sixth; first intermediate between seventh and eighth. Wing, 17.00; tail, 9.00; tarsus, 2.40; middle toe, 1.30; bill from base of cere, 1.30; culmen, .85.

Young (No. 25,934, United States). Upper surface generally light umber, becoming lighter on scapulars and middle wing-coverts, but showing nowhere any trace of spots or bands; wings, scapulars, and back with blackish shaft-streaks, primaries approaching black toward ends, becoming white basally; upper tail-coverts white, with a hastate stripe of brown along shaft; tail, basal half white, terminal half plain drab, becoming darker terminally, the tip narrowly white. Head, neck, and lower plumage in general, white stained with ochraceous, this deepest on tibiae and tarsi; head and neck streaked with dark brown, ear-coverts almost immaculate; breast with oblong spots of clear brown; flanks, abdomen, and anal region continuous uniform rich purplish vandyke-brown, forming conspicuous transverse belt; tibiae and tarsi scarcely varied, the few markings longitudinal; lower tail-coverts immaculate. Under side of wing much as in adult; black area, however, more extended; lining much tinged with rufous, and with longitudinal streaks of dark brown.

b. *Melanistic phase.*

Adult male (No. 28,153, Philadelphia: J. Krider). General plumage blackish brown, the head streaked by whitish edges of the feathers; wing-coverts, secondaries, primaries, and tibial plumes paler terminally; tarsi mottled with whitish; upper and lower tail-coverts tipped indistinctly with white. Tail narrowly tipped with dull white, and with about five nearly obsolete pale ashy bands. Lining of wing black, spotted with white near edge; whole under surface of the primaries pure white anterior to their emargination, beyond which they are black. Third and fourth quills equal and longest; second intermediate between fifth and sixth; first shorter than seventh. Wing, 16.00; tail, 8.85; tarsus, 2.45; middle toe, 1.25.

Adult female (No. 12,008, Philadelphia: C. Drexler). Continuous pure coal-black; forehead white; occiput same beneath surface. Tail paler at tip, and crossed with four ill-defined though continuous bands of ashy white, the last of which is distant over two and a half inches from the tip; lower tail-coverts with a few white spots. Whole lining

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all black; under surface of primaries, anterior to their emargination, dusky. Fourth and fifth quills equal and longest, third only a little longer than sixth. First intermediate between seventh and eighth, tail, 9.00; tarsus 2.50; middle toe 1.20.

adult male, representing the very extreme of the shot at Mount Carmel, Illinois, December 15, 1874, 10 inches in length by 50.00 in extent of wings; bill black basally, the lower mandible tinged with yellow; eyes rich chrome-yellow; eyebrow olivaceous; iris burnt sienna chrome-yellow, the claws black.

It is a winter resident in Illinois, but its abundance varies with different years. From Dr. Brewer's account of it I quote as follows:*

I have never met with this species south of North Carolina or the Alleghanies. He regarded it as a sluggish bird, confined to the meadows and low grounds bordering the rivers and swamps, where its principal food appeared to be moles, or small quadrupeds. He has never known it to attain the wing, although it will occasionally pursue a

Except when alarmed, it flies low and sedately, and devoid of the daring courage or vigor so conspicuous in most of the species. It is also described as somewhat crepuscular in habit, its food being chiefly insects and small aquatic animals.

Archibuteo ferrugineus (Licht.)**FERRUGINOUS ROUGH-LEGGED HAWK.**

Popular synonym. California Squirrel Hawk.

Falco ferrugineus LICHT. Abh. K. Akad. Berl. 1838, 429.

Archibuteo ferrugineus GRAY, 1844.—CASS. in Baird's B. N. Am, 1858, 34.—BAIRD, Cat. N. Am. B. 1859, No. 32.—COUES, Key, 1872, 218; Check List, 1874, No. 357; 2d ed. 1882, No. 526; B. N. W. 1874, 383.—B. B. & R. Hist. N. Am. B. iii, 1874, 300.—RIDGW. Nom. N. Am. B. 1881, No. 448.

HAB. Western United States, east to the Mississippi Valley and Texas; north to the Saskatchewan, south to table-lands of Mexico.

SP. CHAR. *Adult male* (No. 41,719, Fort Whipple, Arizona, Dec. 2, 1864: Dr. Coues). Ground color of head and neck white; each feather with a median streak of black, these growing broader posteriorly; and along the upper border of the ear-coverts so blended as to form an indistinct stripe back from the eye. Entire lower parts (except tibiae) and whole under surface of the wing continuous pure white; breast with a faint tinge of delicate ochraceous, tibiae and tarsi reddish white, tinged with or inclining to deep ferruginous on upper portion, and with numerous transverse bars of darker ferruginous and blackish; sides of the breast with a very few hair-like shaft-streaks of black; flanks with a few distant, dark ferruginous bars; axillars with two or three cordate spots of ferruginous near ends; feathers of the lining next the body, with blended, irregularly hastate spots of rufous; under primary coverts shading into cinereous on terminal half, and with indistinct broadly hastate spots of a darker shade of the same; primaries slaty beyond their emargination, deepening gradually toward their tips. Back, scapulars, and lesser and middle wing-coverts fine rufous, each feather with a broad median, longitudinal spot of brownish plumbeous-black, these on the back rather exceeding the rufous; longer wing-coverts and secondaries ashy umber, with very indistinct transverse bands of darker; primary coverts more ashy, and more distinctly banded; primaries fine chalky cinereous, this lightest on outer four; shafts pure white. Rump nearly uniform brownish black,—posterior feathers rufous with median black blotches; upper tail-coverts snowy white on outer webs, inner webs more rufous; a few concealed blackish transverse spots. Tail pale pearly ash, becoming white basally, and with a wash of dilute rufous along the edge of outer webs; inner webs white, with an ashy tinge thrown in longitudinal washes; outer feathers nearly white, with faint pale ashy longitudinal mottlings; shafts of tail-feathers pure white. Fourth quill longest; third but little shorter; second very much shorter than fifth; first intermediate between seventh and eighth. Wing, 16.75; tail, 9.20; tarsus, 2.95; middle toe, 1.35. "Length, 22.50; extent, 54.50. Iris clear light yellow; cere, edges of commissure, and feet bright yellow; bill very dark bluish horn; mouth, purplish flesh-color, livid bluish along edges."

Young female (No. 41,720, Fort Whipple: Dr. Coues). Almost exactly like the male, but black spots on rufous portions of upper parts much restricted, forming oblong spots in the middle of each feather; rump almost entirely rufous, variegated, however, with black. Longitudinal lines on breast more distinct; transverse bars on flanks and abdomen more numerous; third and fourth quills equal and longest; second intermediate between fifth and sixth; first equal to eighth. Wing, 17.25; tail, 9.75; tarsus, 2.95; middle toe, 1.40. "Length, 23.25; extent, 56.50. Iris light ochraceous brown."

Young female (No. 6,883, Los Angeles, California: Dr. Heermann). General plumage above grayish brown, interscapulars, scapulars, lesser and middle wing-coverts, and feathers of head and neck, edged laterally with light rufous; secondaries passing broadly into pale ashy at ends; primaries slaty brown with obscure darker bands; no appear-

his magnificent hawk, which Dr. Coues justly
some of the North American Falconidæ," is p
than a straggler to Illinois. It has been seen by
the far West, where the few observed were sailing
head, describing broad circles, and resembling th
the manner of their flight. At such times it m
distinguished from *A. sancti-johannis* by the s
lower plumage, which, as seen from below, is t
color of the bird.

GENUS **AQUILA** BRISSON.

Aquila BRISS. Orn. 1, 1760, 419. Type (by elimination), *Falco ch*

GEN. CHAR. Form robust and structure powerful; bearing
Buteo and *Archibuteo*. Wing long, the primaries long and strong
tions very deep. Tail rather short, slightly rounded or wedge-
than in the preceding genera, its outlines nearly parallel, and the
backward at the point; commissure with a more or less prominen
rowly oval, vertical; skin of the cere very hard and firm. Supercil
inent. Feet very strong, the membrane between the outer and m
developed; tarsus less than twice as long as the middle toe; outer
than the inner; claws very long and strong, very much graduated
the toes small except on the terminal joint, where they form bro
tarsi densely feathered all round down to the base of the toes; tibi
oped, loose-webbed, their ends reaching down to or beyond t
Feathers of hind neck and occiput lanceolate, acute, and distinc
differently formed feathers. Third to fifth quill longest; first short
outer five or six with their inner webs deeply emarginated.

This genus is almost peculiar to the Old Wor
seventeen so-called species are known, while Ameri
ber of the genus exclusively its own, the single
species being the same as the European one. Th
of external structure vary somewhat, and the size
of *Buteo latissimus* to that of a sea-eagle (*Haliae*
characters given in the above diagnosis apply e
the species.

Aquila chrysaëtos* (Linn.)*GOLDEN EAGLE.**

Popular synonyms. Mountain Eagle; Ring-tailed Eagle; Black Eagle.

Falco canadensis LINN. S. N. ed. 10, i, 1758, 88.

Aquila canadensis WILS. Am. Orn. i, 1808, pl. 55, fig. 1.—CASS. in Baird's B. N. Am. 1858, 41.—BAIRD, Cat. N. Am. B. 1859, No. 39.

Aquila chrysaëtos var. *canadensis* RIDGW. 1873.—B. B. & R. Hist. N. Am. B. iii, 1874, 214.

Aquila chrysaëtos canadensis RIDGW. Nom. N. Am. B. 1881, No. 449.

Falco chrysaëtos LINN. S. N. ed. 10, i, 1758, 88.

Aquila chrysaëtos DUMONT. Diet. Sci. Nat. i, 1816, 339.—AUD. B. Am. i, 1840, 50, pl. 12; Synop. 1839, 9.—COUES, Key, 1872, 219; Check List, 1874, No. 291; 2d ed. 1882, No. 429; B. N. W. 1874, 308.

Falco fulvus "LINN." WILS. Am. Orn. vii, 1813, pl. 55, fig. 1.

Aquila fulva NUTT. Man. i, 1832, 62.

HAB. Whole of North America, south to elevated regions of Mexico; breeding within the United States chiefly in mountainous districts.

SP. CHAR. *Adult male* (No. 24,167, Fort Crook, California, December 25: D. F. Parkinson). General plumage sooty blackish, this deepest on the head, throat, lower surface in general, under surface of the wings, back, scapulars, shoulders, secondaries, primaries, and rump; middle and secondary wing-coverts, upper and under tail-coverts, tarsi, and inside of tibiae, considerably paler, inclining to light umber. Lanceolate feathers of occiput and hind neck with exposed portions light fulvous, the shafts black; dusky beneath the surface. Tail black, somewhat paler on basal half, and with about three irregular, obsolete zigzag bands of pale brown (on two middle feathers ashy); no concealed white on breast. Fifth quill longest; third and fourth intermediate between fifth and sixth; second considerably shorter than sixth; first intermediate between eighth and ninth. Length 31.60; extent, 78.30. Wing, 24.50; tail, 13.40; culmen, 1.60; from base of cere, 2.15; tarsus, 3.85; middle toe, 2.40; hind claw (chord) 1.90.

Adult female (No. 12,006, Washington, D. C., March 7, 1869: C. Drexler). Almost exactly like the male. Black covering forehead, ear-coverts, cheeks, chin, throat, foreneck, and under parts generally (except the tarsi, inside and front of tibiae, and lower tail-coverts which are light fulvous, the tarsi palest); "mane" more tawny than in the male. The lanceolate, pale, tawny feathers, which in the male cover only the occiput and neck, in the female extend forward over the top of the head, leaving the forehead only blackish. Upper parts and tail as in the male. Fourth quill longest; third slightly shorter than fifth; second intermediate between sixth and seventh; first intermediate between eighth and ninth. Wing, 26.00; tail, 14.25; culmen, 1.70; tarsus, 3.80; middle toe, 2.70; hind claw, 2.15; inner toe, 1.90; outer, 2.00; inner claw, 1.80; middle, 1.35; outer, 1.10.

Young male (No. 49,684, Camp Grant, near Tucson, Arizona, July 10, 1867: Dr. E. Palmer). Continuous deep sepia-black, with the purplish lustre; breast and scapulars with large concealed spots of pure white; lanceolate feathers of the "mane" dull brown, not conspicuously different from the throat; under surface of primaries showing much white basally, most extended on inner feathers. Upper and under tail-coverts more brownish than the rump, the basal portion white. Basal half, or more, of tail white (more ashy on outer feathers), distinctly defined against the broad, pure black, terminal zone; tarsi dull white, clouded with dilute brownish; feathers on inside of tibiae tipped with white.

Young female—older? (No. 9,124, Washington, D. C. December, 1856: B. Cross). Similar, but black more brown; "mane" as in adult; tarsi dull whitish brown; tail-coverts deep umber-brown; tail as in young male, but terminal band narrower, the white occupying nearly the basal two thirds. Wing, 25.70; tail, 14.75; culmen, 1.65; middle toe, 2.80; hind claw, 2.20.

BIRDS OF ILLINOIS.

ing is from Mr. Nelson's "List of the Birds of North-
s" (*Bull. Essex Inst.* VIII., 1876, p. 120).

necommon during winter. Arrives in November and
in spring. Formerly nested throughout the State.
rds the breeding of a pair of these birds in a tree
1851. (*Wis. Agr. Rep.*, 1852.) In December, 1874,
Prairie Chickens in a field a few miles south of Chi-
id, Mr. T. Morris, was suddenly attacked with great
r of these birds, they darting so close that had he
he could easily have touched the first one with his
ose to renew the attack he fired a charge of number
brought it down, dead. The second one then darted
o rapidly that he did not fire until it had turned and
p, but so near that the charge passed through the
body, disabling but not injuring the bird, which was
alive. The cause of this attack was explained by
of a carcass upon which these birds had been feed-
w of the dead eagle contained a large quantity of
learned upon skinning it."

GENUS *HALLÆETUS* SAVIGNY.

ionx, Desc. de l' Egypte, 1892, 34. Type, *Falco ethiops* Linn.

Haliaeetus leucocephalus* (Linn.)*BALD EAGLE.**

Popular synonyms. White-headed Eagle; Gray Eagle; American Sea Eagle; Bird of Washington; Washington Eagle or Sea Eagle.

Falco leucocephalus LINN. S. N. ed. 12, i, 1766, 124.—WILS. Am. Orn. iv, 1811, 89, pl. 26.—AUD. B. Am. 1831, 300, pl. 31; Orn. Biog. i, 1831, 160.

Haliaeetus leucocephalus STEPH. 1826.—NUTT. Man. i, 1832, 72.—AUD. B. N. Am. i, 1840, pl. 14; Synop. 1839, 10.—CASS. in Baird's B. N. Am. 1858, 43.—BAIRD, Cat. N. Am. B. 1859, No. 43.—COUES, Key, 1872, 219; Check List, 1873, No. 362; 2d ed. 1882, No. 534; B. N. W. 1874, 369.—B. B. & R. Hist. N. Am. B. iii, 1874, 326.—RIDGW. Nom. N. Am. B. 1881, No. 451.

Falco ossifragus WILS. Am. Orn. vii, 1813, pl. 55, fig. 2 (= young).

Falco washingtonii AUD. Mag. Nat. Hist. ser. 1, i, 1828, 115; Orn. Biog. i, 1831, 58; B. Am. 1831, pl. 11; ed. 1840, i, 53, pl. 13.

Falco washingtonianus NUTT. Man. i, 1832, 67.

Haliaeetus washingtoni JARD. 1832.—AUD. Synop. 1839, 10; B. Am. i, 1839, 53, pl. 13.

HAB. Entire continent of North America, south to Mexico; northwest through the Aleutian chain to Bering Island, Kamtschatka; breeding throughout.

SP. CHAR. *Adult.* Entire head and neck, upper and lower tail-coverts, and tail, immaculate pure white. Rest of the plumage brownish black, the feathers fading toward the edges, these paler borders being most conspicuous on the upper surface. Primaries uniform deep black. Bill, cere, superciliary shield, and feet, deep chrome-yellow; iris Naples yellow. *Male* (No. 12,017, Philadelphia: C. Drexler): Wing, 22.00; tail, 10.50; culmen, 1.90; top of cere, .80; depth of bill, 1.30; tarsus, 3.00; middle toe, 2.60; outer, 2.00; inner, 1.50; posterior, 1.30. Wing formula, 3-4-5, 2-6; 1-7. *Female* (No. 11,986, Philadelphia: C. Drexler): Wing, 25.00; tail, 12.75; culmen, 2.20; top of cere, .80; tarsus, 3.10; middle toe, 2.85. Wing formula, 3-4, 5-2-6-7-1, 8.

Young, second year (?) (No. 58,977, Mount Carmel, Wabash county, Illinois, December, 1869: D. Ridgway). Head and neck brownish black, white beneath the surface, the penicillate ones of the neck tipped with pale brown. Prevailing color of other portions blackish brown inclining to umber on the dorsal region, wing-coverts, and lower parts; all the feathers white at their roots, this much exposed on the lower parts, where the brown forms tear-shaped terminal spots; axillars and lining of the wing white, each feather of the latter region with a median lanceolate stripe of blackish brown. Primaries and tail brownish black; inner webs of secondaries and tail-feathers spattered longitudinally with creamy white. Bill and cere black; iris brown; feet yellow. Wing, 25.50; tail, 15.00; culmen, 2.10; tarsus, 3.10; middle toe, 2.60.

Young, first year (No. 41,595, eastern United States?). Whole plumage, nearly uniformly black, this very continuous above; beneath, the basal white is much exposed, producing a somewhat spotted appearance. Primaries and tail deep black, the inner webs of the latter sprinkled with cream color.

Young in down (Washington, D. C.) Downy covering uniform deep sooty gray; the sprouting feathers on wings, etc., all brownish black.

The following measurements represent the average of the sexed specimens which have been examined. It will be noticed that the young of either sex exceed the adults in the length of the wing and tail. Altogether more than sixty specimens have been inspected.

Young females	25.50-26.00	15.00-15.50	2.10-2.20	3.25-3.70
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A very fine adult female obtained at Mount January 1, 1870, measured 34.50 inches in length (7 feet 1 inch) in spread of wings; weight 12 cere uniform wax-yellow, inclining to chrome; r pale chrome-yellow; iris clear light Naples yellow deep chrome-yellow, claws black.

A very large specimen in the collection of the Chicago, measured 3 feet 6 $\frac{1}{4}$ inches in total length in extent.

Along all the larger water-courses in our State is a more or less common bird, and may be met with the year.

"The White-headed Eagle," writes Dr. Brewer, is equally well adapted by nature for the endurance and is apparently indifferent to either. Its residence only by its abundance of food, especially that of fish to matter very little whether that plenty is procured Arctic circle or on the coast and rivers of Florida places like the Falls of Niagara, where the stream contribute the remains of animals destroyed by the torrent, this eagle is especially abundant. Unsurvoracious, not select in its choice of food, and capable for itself when necessity compels, we find this suitable emblem of our country now enacting the type and plundering the Fishhawk of the fruits of it sharing with the Raven and the Vulture the dead Columbia, and in other places diving for and catching. The impetuosity and skill with which it pursues robs the Fishhawk, bearing off a fish it has just witnessed to be appreciated; and the swiftness Eagle can dart down.

the least wonderful feature of this striking performance. On the banks of the Columbia, where there are no Fishhawks to depend upon, this bird finds an easy subsistence on the vast numbers of dead and dying salmon which abound; and in Florida Mr. Allen has observed it dive and catch its own fish. This is also confirmed by the statements of other naturalists. Wilson also accuses this Eagle of destroying great numbers of young pigs in the Southern States, young lambs, and even sickly sheep; and in one instance it attempted to carry off a child, which was only saved by its dress giving way."

Catharista atrata (Bartr.)

BLACK VULTURE

Popular synonym. Carrion Crow.

Vultur atratus BARTB. Trav. 1792, 289.

Cathartes atratus LESS. 1828.—AUD. Synop. 1839, 3; B. Am. i, 11
Baird's B. N. Am. 1858, 5.—BAIRD, Cat. N. Am. B. 1859, No.
222; Check List, 1874, No. 366; B. N. W. 1874, 383.

Catharista atrata GRAY, 1869.—B. B. & B. Hist. N. Am. B. iii, 1874,
Am. B. 1881, No. 455.—COUES, 2d Check List, 1882, No. 538.

Cathartes iota ("MOL.") BP. 1828. (nec Mol.).—NUTT. Man. i, 1832, 46.
1835, 35; v, 1839, 345, pl. 106.

HAB. Whole of tropical, subtropical, and warm-temperate Ame
Indies; north, on Atlantic coast, regularly to North Carolina, casu
wick; in the interior to southern Ohio, Indiana, and Illinois, and we
to northern Dakota.

SP. CHAR. Form heavy; the wings and tail short, the latter squa
rectrices very hard and stiff. Bill strong, the mandibles broader tha
equal depth, the terminal hook well developed; upper and lower
parallel, and nearly straight. Nostril narrow, its anterior end contr
Wing, 17.00-17.50; tail, 7.50-8.50; culmen, .90-.95; tarsus, 3.00; middle t
inner, 1.50; posterior, .75.

Adult. Bill blackish, the point horny white; naked skin of the h
of the neck blackish. Entire plumage continuous, perfectly unifor
maries becoming grayish basally, (more hoary whitish on their ur
shafts pure white for their whole length.

For some unexplained reason, the Black Vulture is
bird in most parts of Illinois. In fact, it does n
numerous anywhere, even in the extreme southern
State. Near Mt. Carmel the writer has met with
cypress swamp, where, during spring and summer,
times seen, but always singly. In the same local
Buzzards could be counted by hundreds. It seen
be a very local species, and the country about Mt
be in some way unsuited to its habits. It is so
different in appearance and manner from the

"Both in their mode of flight and in their movements upon the ground this species differs materially from the Turkey Buzzard. The latter walks steadily while on the ground, and when it mounts does so by a single upward spring. The Black Vulture is ill at ease on the ground, moves awkwardly, and when it essays to fly upward takes several leaps in a shuffling side-long manner before it can rise. Their flight is more labored, and is continued by flapping several times, alternated with sailing a limited distance. Their wings are held at right angles, and their feet protrude beyond their tail-feathers. In all these respects the differences between the two birds are very noticeable, and plainly mark the species." (BREWER.)

ORDER COLUMBÆ.—THE PIGEONS

CHAR. Basal part of the bill tumid and covered with a soft skin; the narrow, longitudinal nostrils, overhung by a valve-like scale; portion of the bill hard; the culmen more or less strongly arching; the front toes generally cleft to the extreme base. Primary feathers without aftershafts, and very easily detached from secondaries, eleven to fifteen; rectrices, twelve to fourteen.

The number of families composing this order is what uncertain. Whatever the number, however, but one, the *Columbidæ*, or true Pigeons, whose follows:

FAMILY COLUMBIDÆ.—THE PIGEONS

CHAR. The basal portion of the bill covered by a soft skin, the nostrils, overhung by an incumbent fleshy valve, the apical portion of the bill hard; the culmen more or less strongly arching; the hind toe on the same level with the rest; the anterior toes cleft to the base. Tarsi more or less naked; covered laterally and behind with a soft skin.

"The bill of the *Columbidæ* is always shorter than the rest of the head; the basal half covered by a soft skin; the upper one very broad at the tip, where it is also somewhat decurved; the lower one with a long nasal groove, the posterior portion occupied by a scale, covered by a soft cere-like skin. The nostril an elongated slit in the lower border of the scale. The bill is never notched, always depressed and convex. The bill is never notched. Doves, though *Didunculus* shows well-defined serrations. The bill is small, soft, and somewhat fleshy.

"The wing has ten primaries, and eleven or twelve, rarely fifteen, secondaries; the latter broad, truncate, and of nearly equal length. The tail is rounded or cuneate, never forked.

"The tarsus is usually short, rarely longer than the middle toe, scutellate anteriorly, [except in *Starnœnas*] and with hexagonal plates laterally and behind; sometimes naked. An inter-digital membrane is either wanting entirely, or else is very slightly indicated between the middle and outer toes." (*Hist. N. Am. B.*)

The two principal groups of American *Columbidæ*, which for convenience may be termed subfamilies, may be briefly distinguished as follows:

Columbinæ. Tarsus shorter than the lateral toes, feathered above.

Zenaidinæ. Tarsus longer than the lateral toes, entirely bare of feathers.

The North American genera (but two of which come within the field of this work) are characterized as below, the extralimital genera being in brackets:

SUBFAMILY **Columbinæ.**

CHAR. Tarsi stout, short, with transverse scutellæ anteriorly; feathered for the basal third above, but not at all behind. Toes lengthened, the lateral decidedly longer than the tarsus. Wings lengthened and pointed. Size large. Tail-feathers twelve.

1. **Columba.** Head large; tail short, broad, and rounded.]
2. **Ectopistes.** Head very small; tail much lengthened, cuneate.

SUBFAMILY **Zenaidinæ.**

CHAR. Tarsi stout, lengthened; always longer than the lateral toes, and entirely without feathers; the tibial joint usually denuded. Tarsus sometimes with hexagonal scales anteriorly. Tail-feathers sometimes fourteen.

- a. **Zenaidæ.** Size moderate. Wings lengthened, acute, the primaries much longer than the secondaries. Tarsus scutellate anteriorly. A blackish spot beneath the auriculars (except in *Egyptila*); tail-feathers tipped with white, and with a blackish subterminal bar. Sides of the neck with a metallic gloss.
- [3. **Egyptila.** *Outer primary abruptly attenuated terminally.* Color plain grayish brown above, lighter and (usually) more vinaceous below; under side of wing mainly rufous.]
- [4. **Melopelia.** Bill lengthened, much depressed. A white patch on the wing; no black spots on the scapulars; plumage ashy, lighter beneath. Tail of twelve feathers, rounded.]

BIRDS OF ILLINOIS.

Bill smaller, more compressed. No white patch on the wing; scapulars spots. Above olivaceous, beneath vinaceous. Tail usually of twelve anned.)

Similar to *Zenaidura*, but tail of fourteen feathers, much more length-graduated.

Size very small. Wings rounded, the primaries scarcely longer extirals. Tarsus scutellate anteriorly. No blackish spot beneath the, no metallic gloss on sides of the neck.

Tail of twelve feathers, lengthened much longer than wings; doubly so lateral feathers much shorter, the three outer pairs with white ter-

lina. Tail of twelve feathers, short, much less than wings; simply so lateral feathers only slightly shorter, outer feathers without white or with only a slight edging. Wing-coverts with oblique black spots, without transverse black bars.

Size moderate (generally a little larger than *Zenaidura*), form robust. ke. Legs very stout, tarsal decidedly longer than the middle toe, scaled anteriorly. Wings short, very broad and much rounded, but toes decidedly longer than the secondaries.

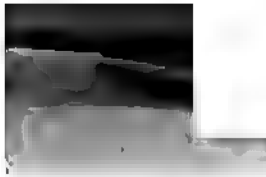
Legs very stout; tarsal covered anteriorly with hexagonal scales; a black gular patch, bordered below by white.

Legs moderate, tarsal covered anteriorly with transverse scutellae, or blue, and throat without black patch or white markings.

GENUS *ECTOPISTES* SWAINSON.

SWAINSON, Zool. Jour. III, 1837, 362. Type, *Colinus migratoria* LINN.

Head very small. Bill short, black, cubical one third the rest of the beak running very far forward; gonys very short. Tarsal very short, partly by feathers. Inner lateral claw much larger than outer, reaching middle one. Tail very long and excessively emarginate; about as long as primary longest. Black spots on scapulars; a black and a rufous spot on all-feathers.



becoming paler posteriorly; the sides of the neck richly glossed with metallic solferino-purple. The female has the head, foreneck, and jugulum brownish ashy or drab, gradually lightening posteriorly.

Ectopistes migratorius (Linn.)

PASSENGER PIGEON.

Popular synonym. Wild Pigeon.

Columba migratoria LINN. S. N. ed. 12, i, 1766, 285.—WILS. Am. Orn. i, 1808, 102, pl. 44, fig. 1.—NUTT. Man. i, 1832, 629.—AUD. Orn. Biog. i, 1831, 319; v. 1839, 561, pl. 62.

Ectopistes migratoria SW. Zool. Jour. iii, 1837, 355.—AUD. Synop. 1839, 174; B. Am. v, 1842, 26, pl. 285.—BAIRD, B. N. Am. 1858, 600; Cat. N. Am. B. 1859, No. 448. —COUES, Key, 1872, 225; Check List, 1874, No. 370; 2d ed. 1882, No. 543; B. N. W. 1874, 337.—B. B. & B. Hist. N. Am. B. iii, 1874, 808, pl. 57, fig. 4.—RIDGW. Nom. N. Am. B. 1881, No. 459.

HAB. Whole of temperate eastern North America, west to the Rocky Mountains; no extralimital records, except Cuba and England (accidental). Straggler to Western Province of United States (Nevada, eastern Oregon, etc.).

SP. CHAR. *Adult male.* Head and hind-neck bluish plumbeous, lighter on chin; rump bluish plumbeous; back, scapulars, and tertials grayish brown or drab; wings more plumbeous, the innermost coverts, with tertials and outer scapulars, spotted with black. Tail shading from dusky on middle rectrices through gradually lighter slate and ashy to white on lateral feathers; inner web of each feather (except middle pair) with a transverse spot of black, preceded by another of rufous. Jugulum and breast rich vinaceous rufous, gradually changing to soft pinkish vinaceous on the sides. Crissum and middle of abdomen white. Hind part and sides of neck with brilliant reflections of metallic solferino-purple, changing to violet, green, golden, etc. Bill black, the cere glaucous whitish, the rictus crimson; iris bright red; legs and feet lake-red. *Adult female.* Head brownish gray, paler toward throat; jugulum and breast brownish gray or drab, changing to paler brownish gray on sides; metallic reflections on neck less brilliant. *Young.* Somewhat like the adult female, but the wing-coverts, scapulars, and feathers of the head, neck, and jugulum tipped with whitish, causing a mottled appearance; rusty margins of primaries more distinct, widely bordering the tips of the quills. Bill black, the rictus pinkish; iris brown, with a narrow outer ring of carmine; feet pale livid salmon-pink, the scutellæ more brownish; claws blackish.

Wing, 8.40-8.50; tail, 8.20-8.60; culmen, .60-.65; tarsus, 1.15; middle toe, 1.15.

So much has been written about the extraordinary abundance, in past years, of the Wild Pigeon, that the subject may seem threadbare. Still, it is so full of interest, that we quote the following from *History of North American Birds* (Vol. III., pp. 371-374):

"Several writers, who have witnessed the occasionally enormous flights of these Pigeons, have given very full and graphic accounts of their immense numbers that seem hardly credible to those who have not seen them. Mr. Audubon relates that in 1819, on his way from Henderson to Louisville, in crossing the barrens near Hardensburg, he observed these birds flying to the southwest in greater

the woods were destitute of mast, and all fled failed to reach any with a rifle. He speaks of tions as beautiful in the extreme, especially when upon the rear of a flock. All at once, like a noise like that of thunder, they rushed together in and darted forward in undulating lines, descend near the earth with marvellous velocity, then more perpendicularly in a vast column, wheeling and twisting continued lines seemed to resemble the coils of a During the whole of his journey from Hardensburgh fifty-five miles, they continued to pass in undisturbed and also did so during the three following days flew so low that multitudes were destroyed, and the entire population seemed to eat nothing else but .

GENUS **ZENAIDURA** BONAPARTE.

Zenaidura BONAP. Consp. Avium, ii, 1854, 84. Type, *Columba c*

"GEN. CHAR. Bill weak, black; culmen from frontal feathers above. Tarsus not as long as middle toe and claw, but considerably longer than outer, and reaching to the base of middle. Wing quill longest; first and third nearly equal. Tail very long, equally graduated and cuneate, of fourteen feathers." (*Hist. N. Am.*

The fourteen tail-feathers render this genus very among the North American doves. It was formerly Passenger Pigeon in *Ectopistes*, but has nothing in but the lengthened tail, as it belongs to a different present three species are known, one (*Z. graysoni* peculiar to Socorro Island, well off the coast of western Yucatan. The latter is possibly a hybrid between *Zenaidura macroura* and *Zenaidura macroura*, being exactly intermediate in size. while the former is

Zenaidura macroura (Linn.)**MOURNING DOVE.**

Popular synonyms. Turtle Dove; American Turtle Dove; Common Dove; Carolina Dove.

Columba macroura LINN. S. N. ed. 10, i, 1758, 164 (part).

Zenaidura macroura RIDGW. Proc. U. S. Nat. Mus. viii, 1885, 355.

Columba carolinensis LINN. S. N. ed. 12, i, 1766, 286.—WILS. Am. Orn. v, 1812, 91, pl. 43, fig. 1.—NUTT. Man. i, 1832, 626.—AUD. Orn. Biog. i, 1831, 91; v, 1839, 555, pl. 17.

Ectopistes carolinensis RICH. 1837.—AUD. Synop. 1839, 195; B. Am. v, 1842, 36, pl. 286.

Zenaidura carolinensis BP. 1854.—BAIRD, B. N. Am. 1858, 604; Cat. N. Am. B. 1859, No. 451.—COUES, Key, 1872, 226; Check List, 1874, No. 371; 2d ed. 1882, No. 544; B. N. W. 1874, 389 (*Zenaidura*).—B. B. & R. Hist. N. Am. B. iii, 1874, 383, pl. 58, fig. 2.—RIDGW. Nom. N. Am. B. 1881, No. 460.

HAB. The whole of temperate North America to a little north of the United States boundary (Ontario, etc.); south through Mexico and Central America to the Isthmus of Panama, Cuba, Jamaica, and some other West Indian islands.

SP. CHAR. *Adult male.* Above grayish brown, the scapulars with roundish or oblong spots of black; sides, and under surface of wings light grayish blue. Tail, except middle pair, shading from white on outer web of lateral feathers to dark plumbeous on next to middle pair, which are grayish brown; each rectrix crossed, just beyond the middle, by a broad bar of black, after which the gray is considerably lighter than that anterior to the spot. Occiput and nape light pearl-gray, with a glaucous tinge; rest of head pale purplish cinnamon, inclining to whitish on the chin. Breast delicate pinkish vinaceous changing to fine creamy buff on abdomen; crissum pale creamy buff. Sides of neck richly glossed with metallic reddish purple, and just beneath the auriculars a spot of glossy blue-black. Bill black, the cere bluish gray, and rictus lake-red; naked orbital skin delicate pale blue, tinted with greenish; iris deep brown; feet lake-red. claws black. Total length (fresh) 12.60-13.00; extent, 17.50-18.25; wing (skin), 5.80-6.10; tail, 6.00-6.50. *Adult female.* Similar to the male, but colors duller. Head light drab, whitish on chin, and scarcely, if at all, bluish on occiput and nape; breast light drab, changing gradually to creamy buff on the abdomen; metallic gloss on sides of neck fainter, and black spot beneath ears smaller and without blue gloss. Size a little smaller. *Young.* Somewhat like the adult female, but much duller, more brownish, and with feathers of jugulum, neck, and upper parts margined or tipped with paler.

The Mourning Dove is found throughout the State and is a permanent resident in most places, though less numerous and of uncertain occurrence in winter. In the spring of 1883 all the specimens shot at Wheatland, Indiana, had the ends of the toes frozen off, showing that they had braved the almost unprecedented cold of the preceding winter. The species have even been known to winter as far north as Canada; Mr. John J. Morley, of Windsor, Ontario, informing Professor Baird (*in epist.*) that he had seen considerable numbers near that place on the 6th of December, 1878, and that he had on other occasions seen it "in various places, from three to twelve at a time."

111 yard and showing but little fear when ap

ERRATA.

Page 5, line 2 from bottom, after *that* insert *it*.

Page 30, line 1, for *but* now read *not* now.

Page 70, line 17, for *townsendi* read *townsendii*; line 5 from bottom, before .85 read 3.

Page 88, for *Troglodytidae* read *Troglodytinæ*.

Page 99, lines 9 and 14 from bottom, for *hyemalis* read *hiemalis*.

Page 121, line 12 from bottom, for *swainsonii* read *swainsoni*.

Page 123, for *Helmitheros* read *Helmitherus*.

Page 133, line 20 from bottom, for *marima* read *maritima*.

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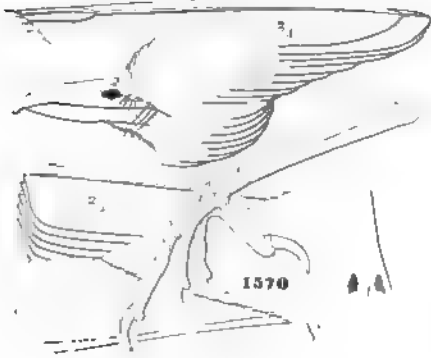
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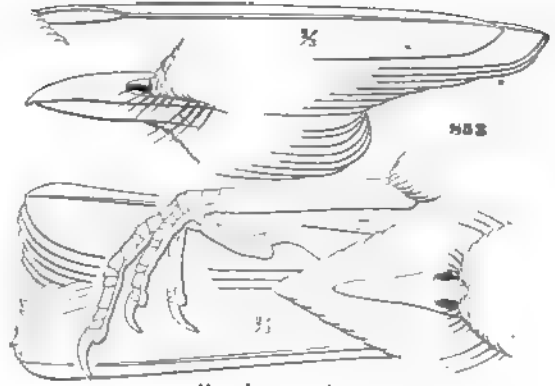
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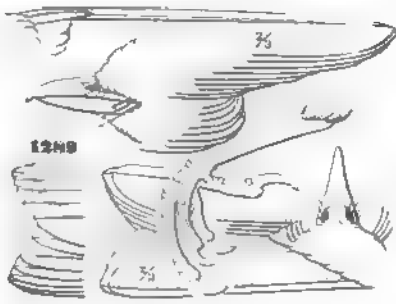
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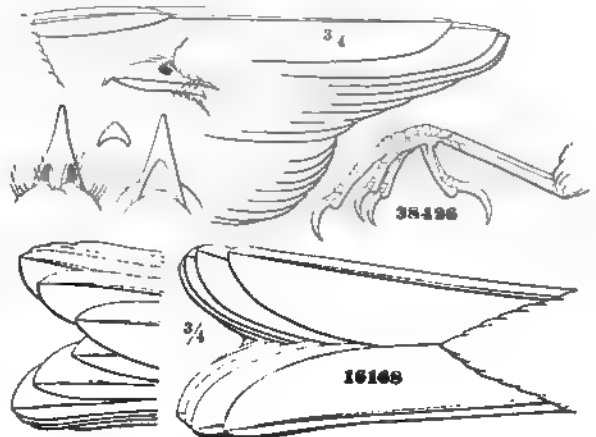
Turdus mustelinus.



Merula migratoria.



Sialia sialis.



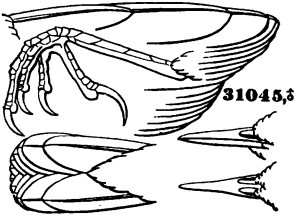
Myadestes townsendii.



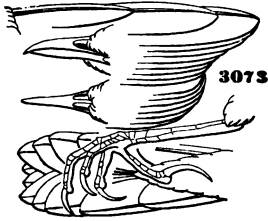
Polioptila caerulea.



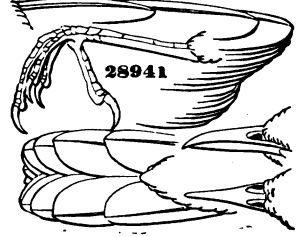
Regulus satrapa.



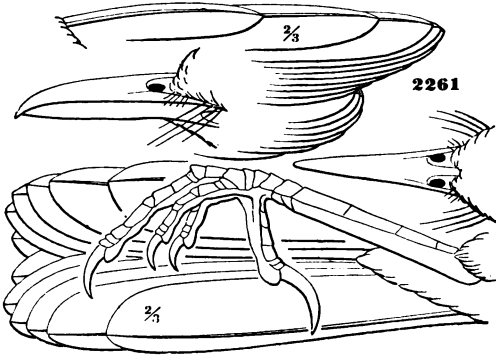
"Anorthura" hiemalis.



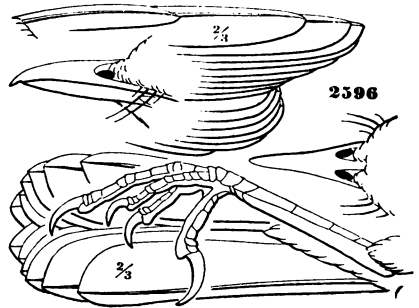
Cistothorus stellaris.



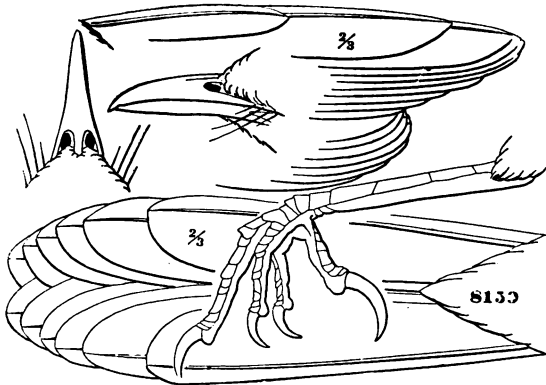
"Telmatodytes" palustris.



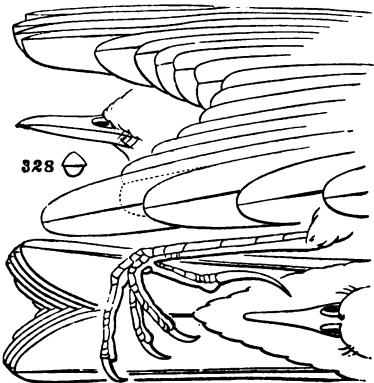
Harporhynchus rufus.



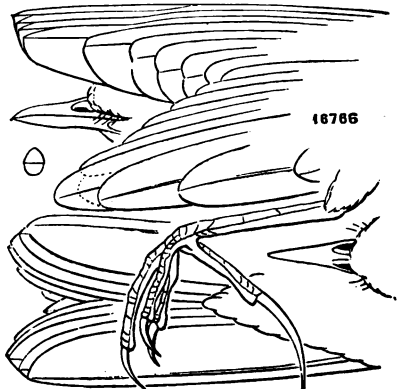
Galeoscoptes carolinensis.



Mimus polyglottos.

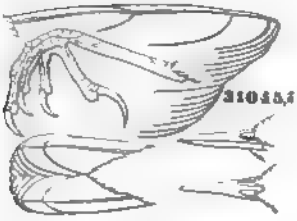


Anthus pensilvanicus.

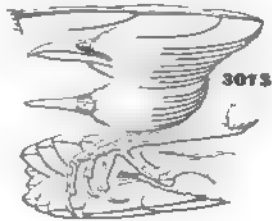


"Neocorys" spragueii.

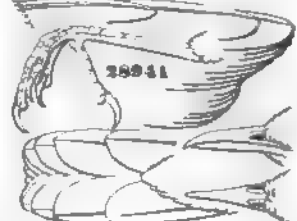
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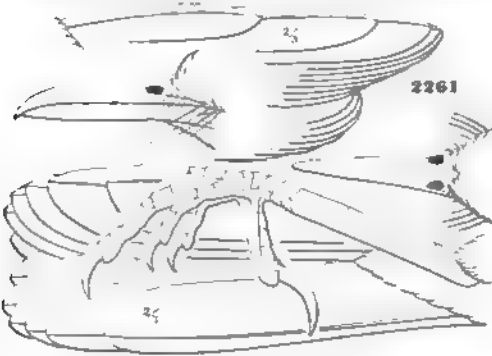
"Aurithura" hiemalis



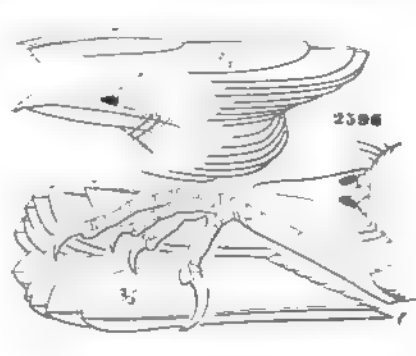
Calothorus stellaris.



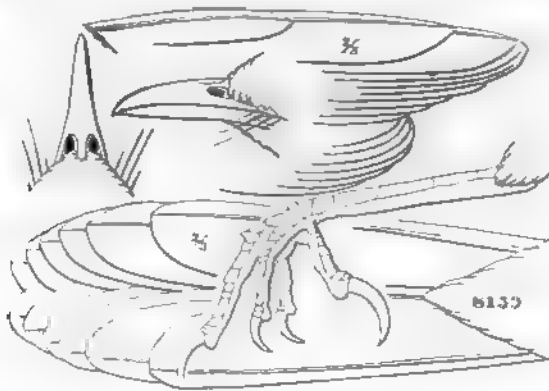
"Telmatodytes" palustris.



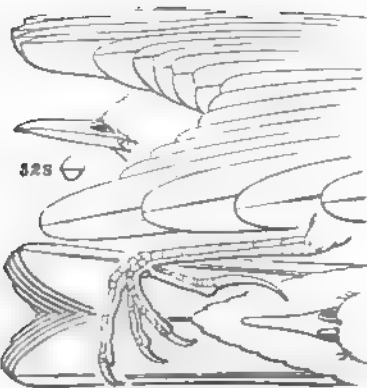
Harporhynchus rufus.



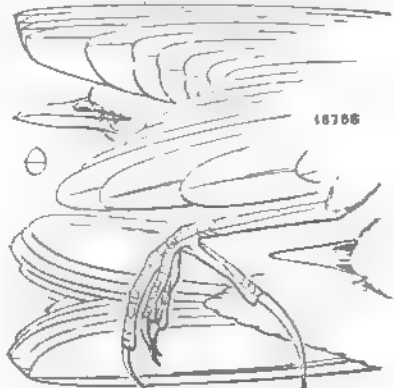
Galathea carolinensis.



Minus polyglottus.



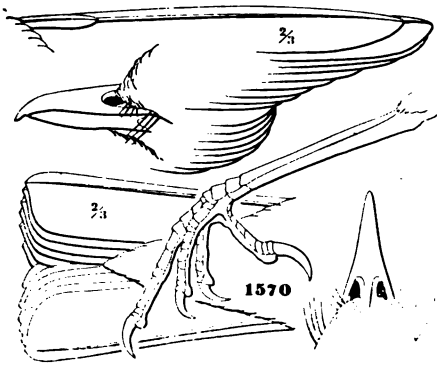
Anthus pensilvanicus.



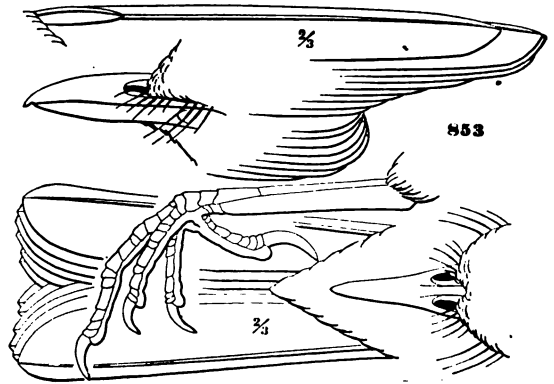
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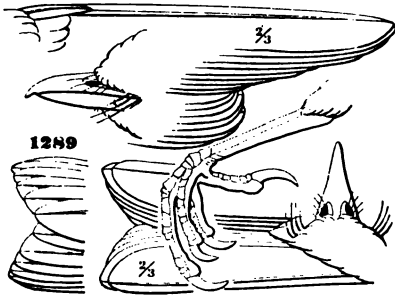
Wryneck, 37.
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 Black-cap
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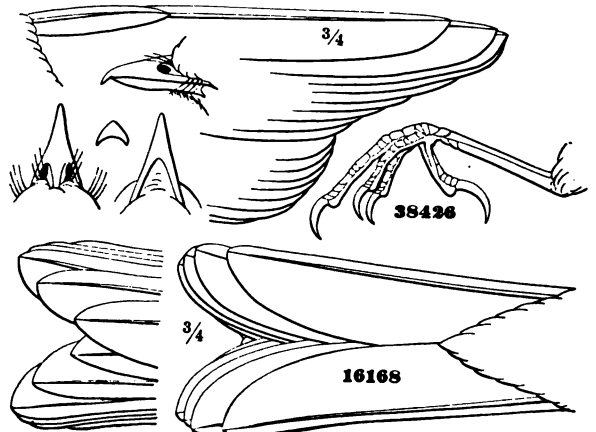
Turdus mustelinus.



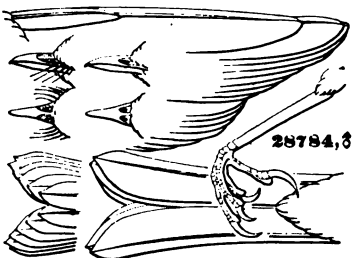
Merula migratoria.



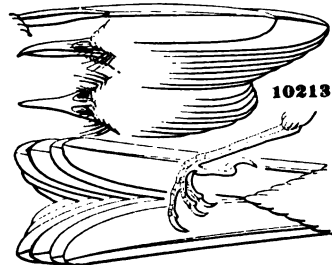
Sialia sialis.



Myadestes townsendii.



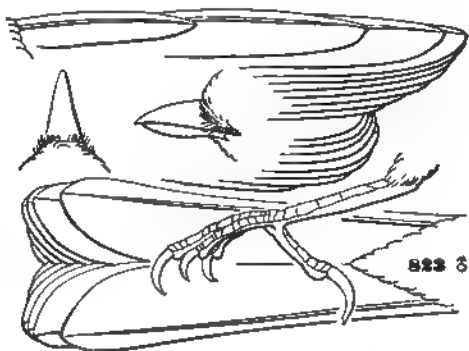
Polioptila caerulea.



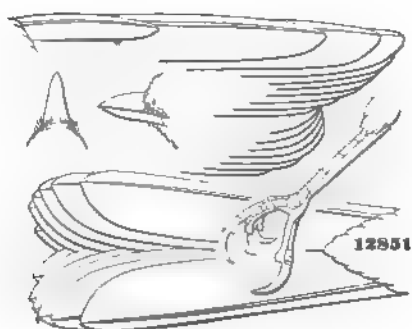
Regulus satrapa.

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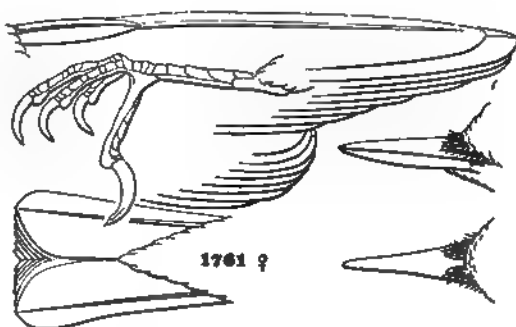




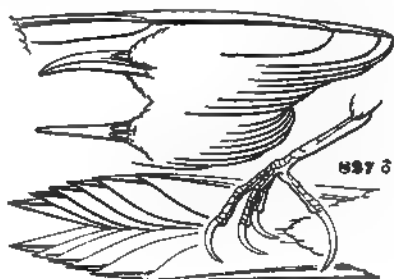
"Lophophanes" bicolor.



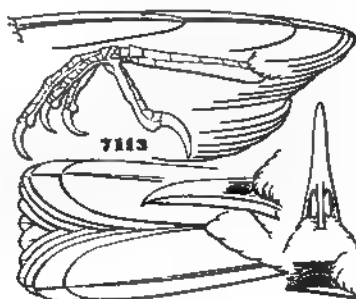
Parus atricapillus



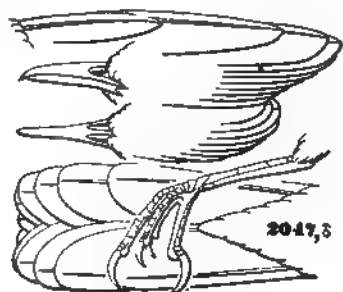
Sitta carolinensis.



Certhia americana.



Thryothorus ludovicianus.

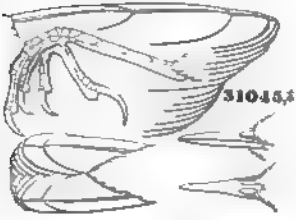


"Thryomanes" bewickii.

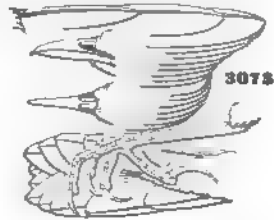


Troglodytes aedon.

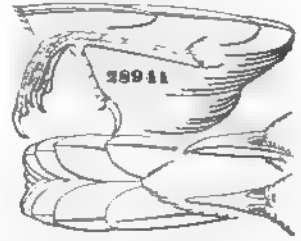




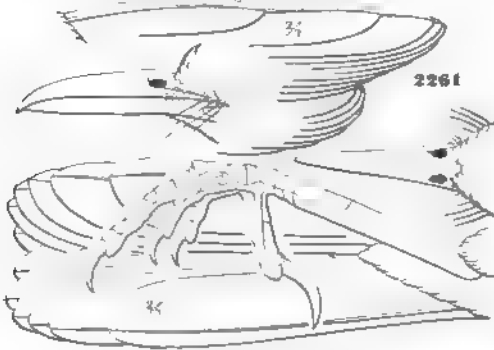
"Anorthura" hiemalis.



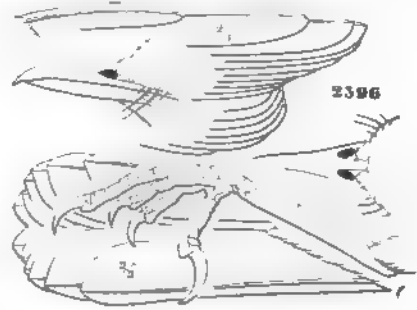
Cistothorus stellaris.



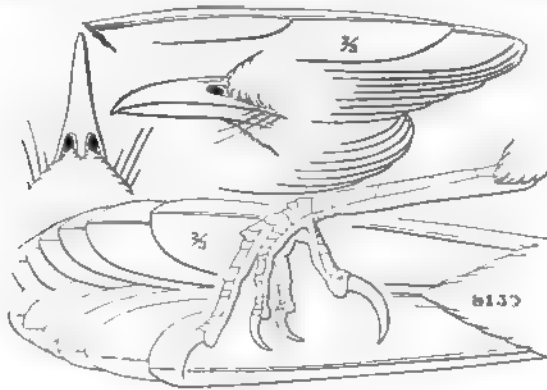
"Teimatodytes" palustris.



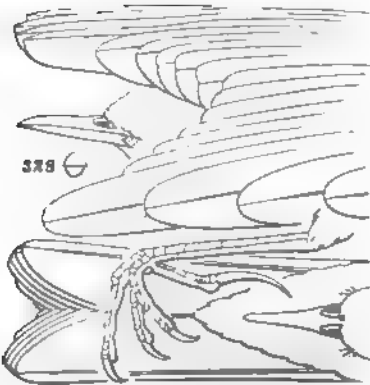
Harporhynchus rufus.



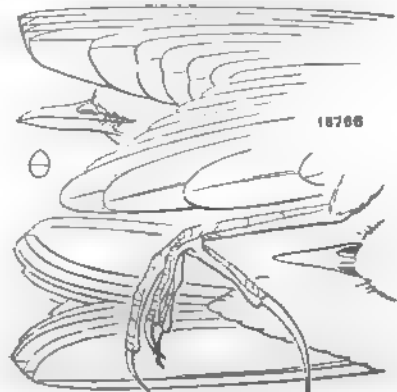
Galroscoptes carolinensis.



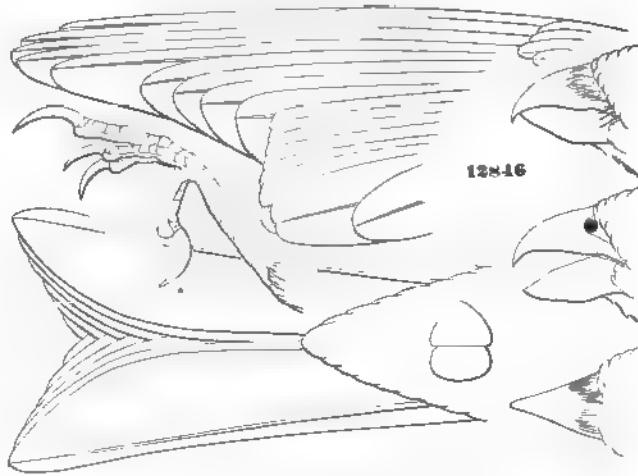
Minus polyglottus.



Anthus pensilvanicus.

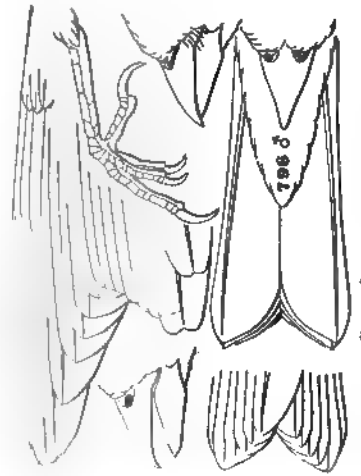


"Neocorys" spragueii.



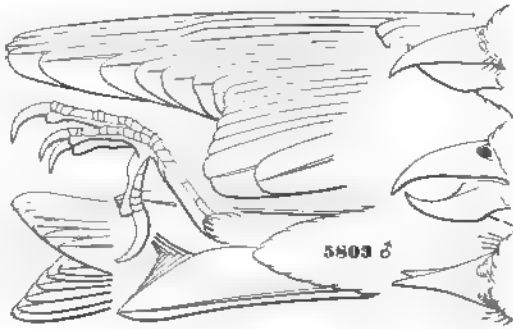
12816

Ponicola emuleator.



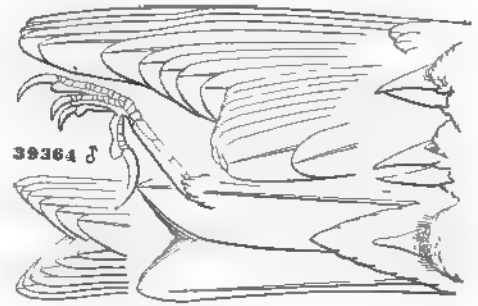
796 ♂

Carpodacus purpureus.



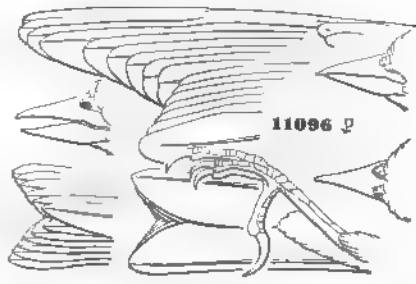
5803 ♂

Loxia minor.



39364 ♂

Acanthis linaria.



11096 ♀

Spinus pinus.



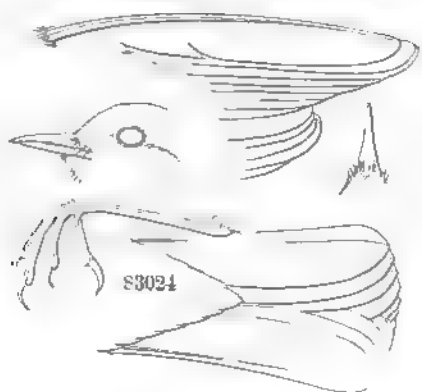
19832

Plectrophenax nivalis.

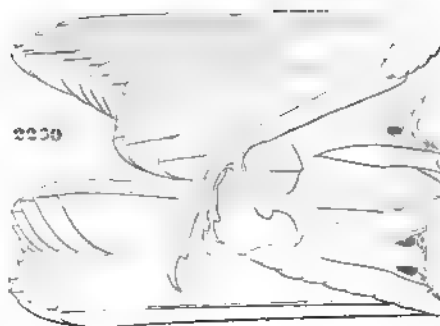


1521 ♀

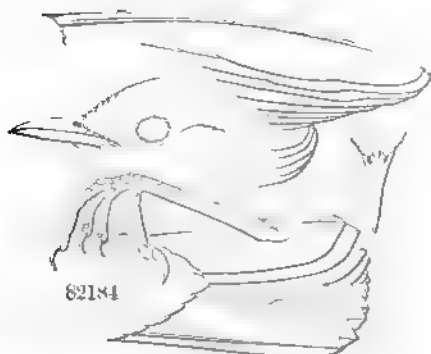
"Astragalinus" tristis.



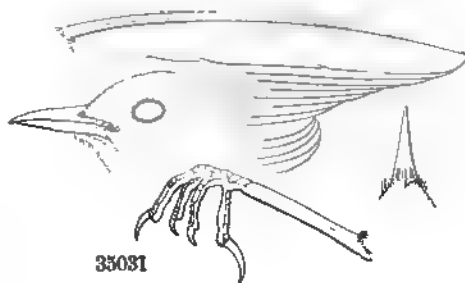
Dendroica palmarum.



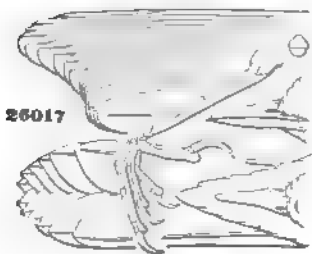
Icteria virens.



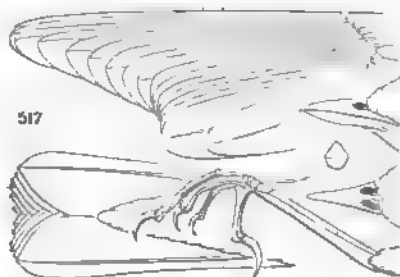
Geothlypis philadelphia.



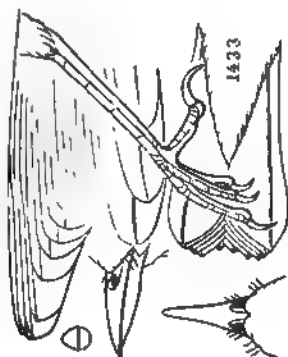
"Oporornis" agilis.



Geothlypis trichas



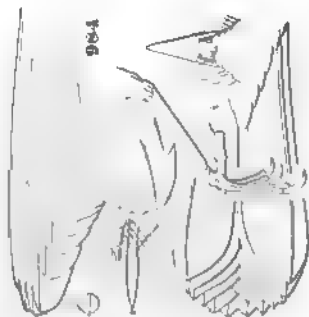
"Oporornis" formosa



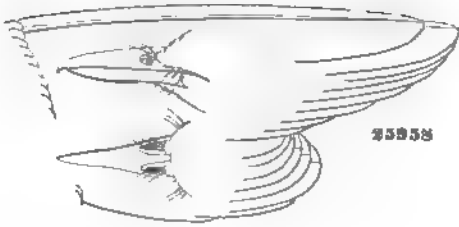
Seturus aurocapillus.



Sylvania mitrata.

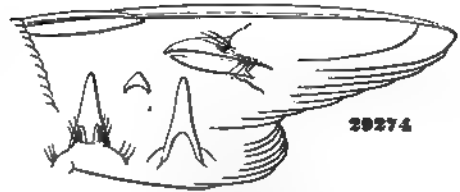


Setophaga ruticilla.



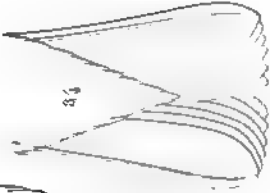
25358

"Vireosylva" barbatula.

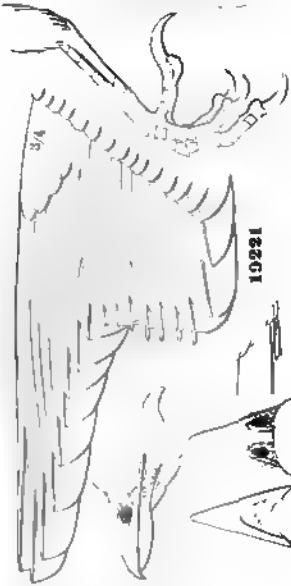


29274

"Lanivireo" solitarius.



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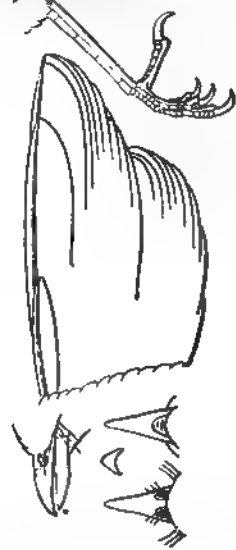
19221

Ampelis garrulus.



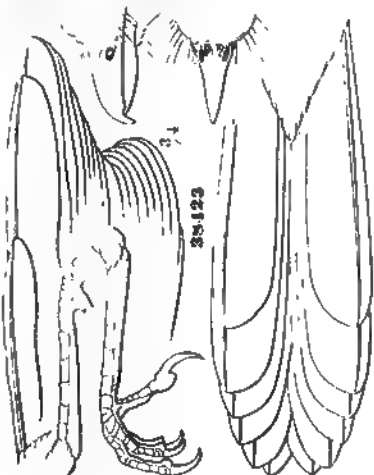
1561

Progne subis.



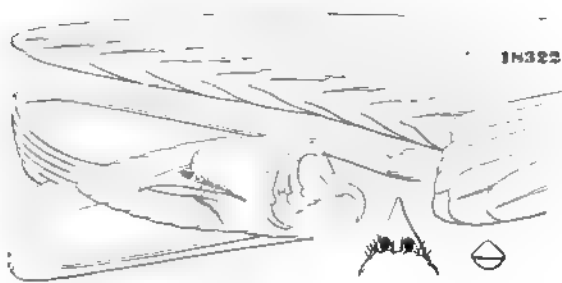
Y. boreboracensis.

29248



28423

Lanus "ercubitorides."



14323

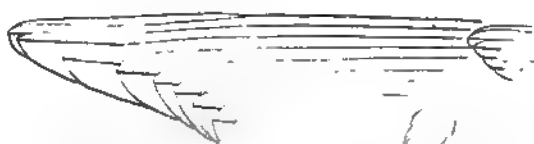
Petrochelidon lunifrons.



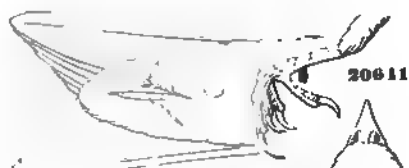
Chelidon erythrogaster.



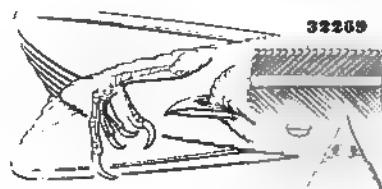
Tachycineta bicolor.



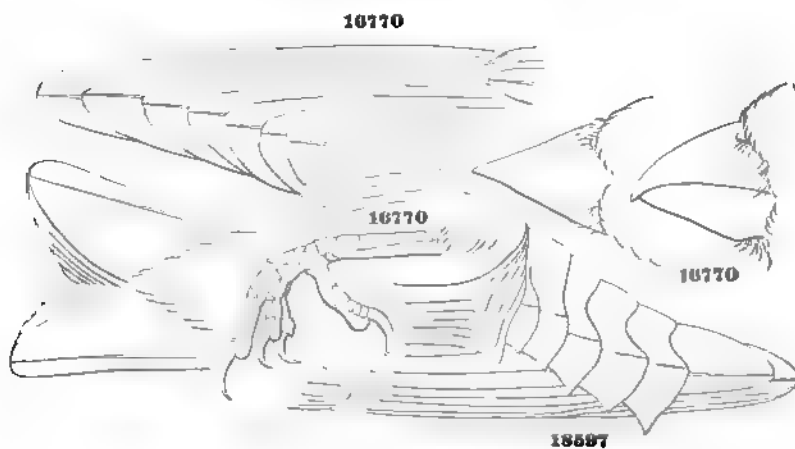
Choncola riparia.



Hirundo erythromelas.

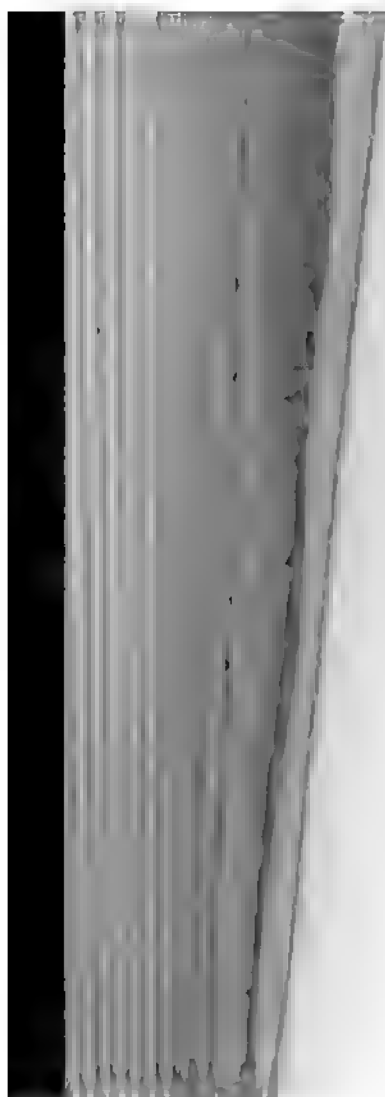


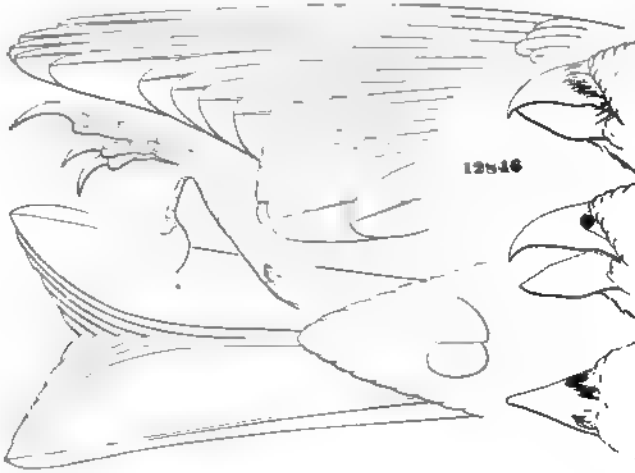
Stelgidopteryx serripennis.



16770
"Hesperiphona" vespertina.

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Coccythraustes vulgaris.

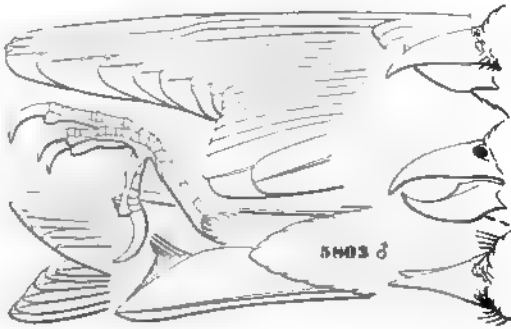




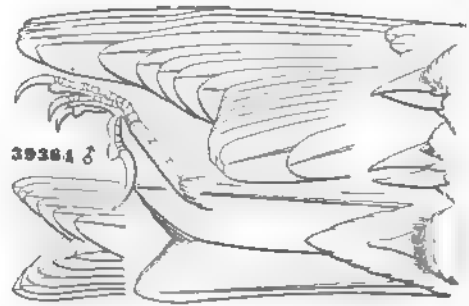
Pinicola enucleator.



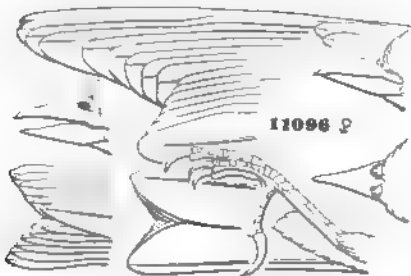
Carpodacus purpureus.



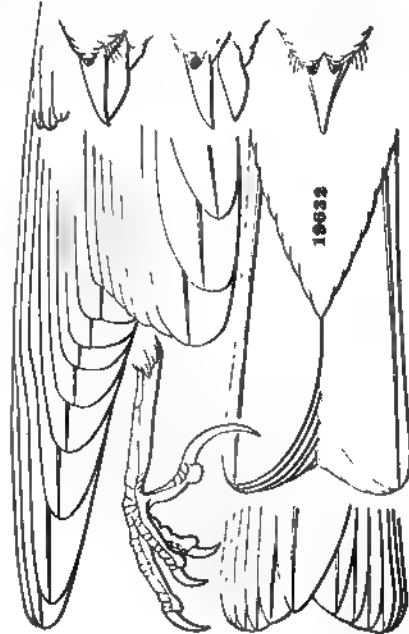
Loxia minor.



Acanthis linaria.



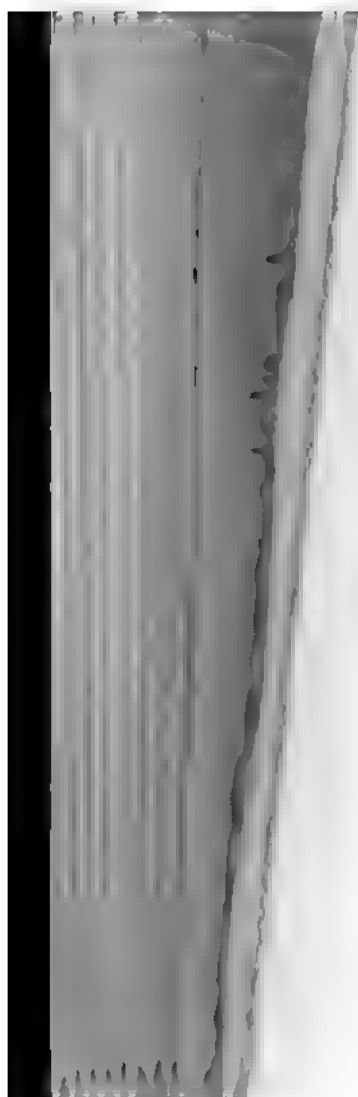
Spinus pinus.

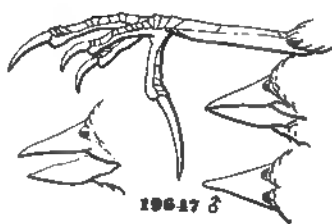
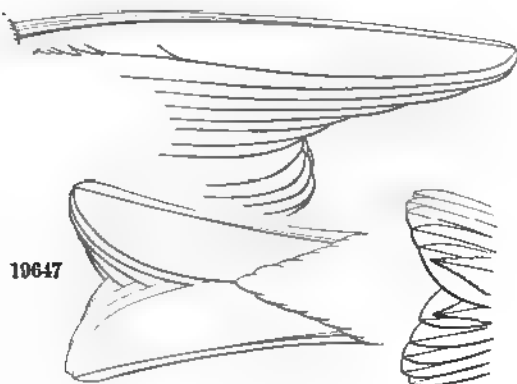


Plectrophenax nivalis.

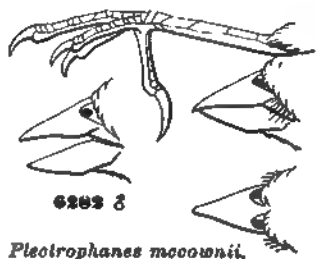


"Astragalinus" tristis.

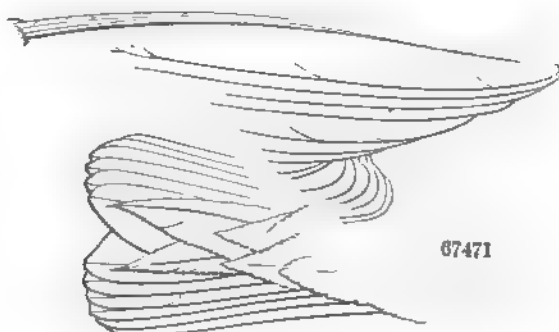




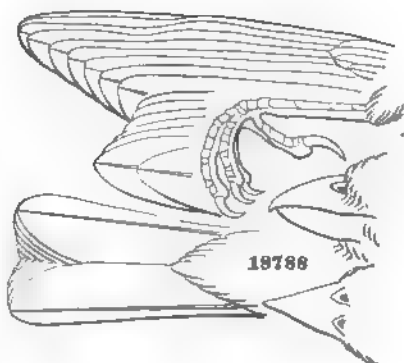
Calcarius lapponicus.



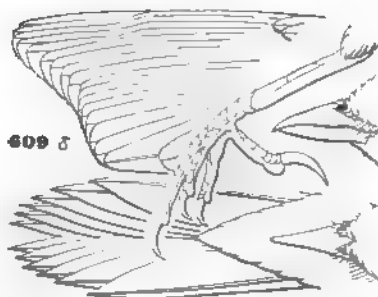
Plectrophanes mecooni.



Rhyn hophanes mecooni.



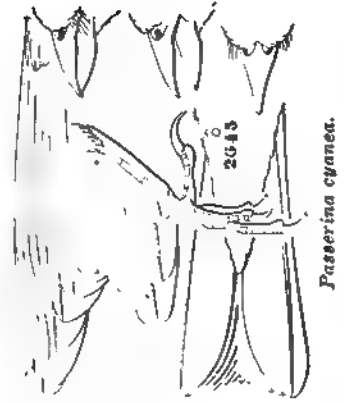
Passer domesticus.



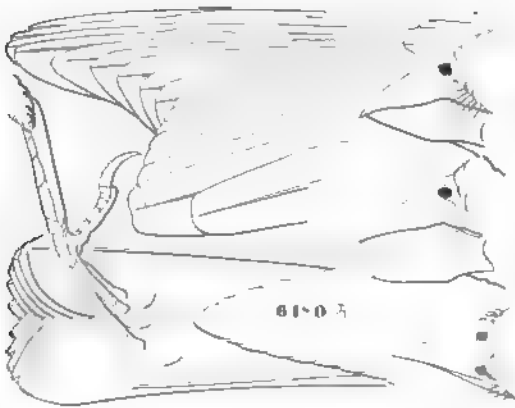
Ammodramus caudatus.



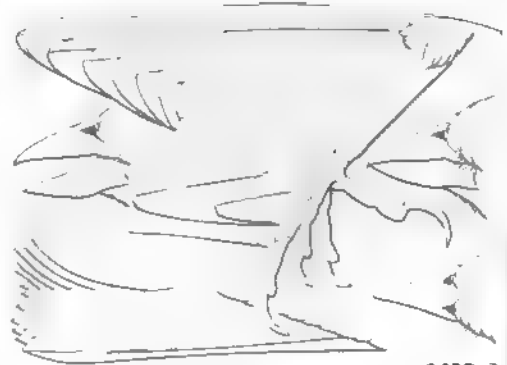
Habia ludoviciana.



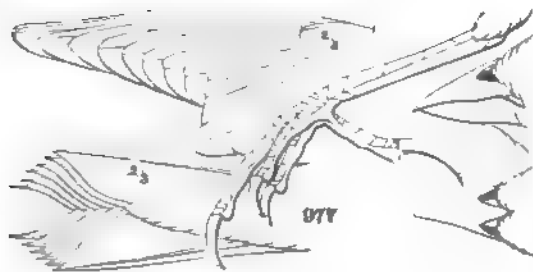
Passerina cyanea.



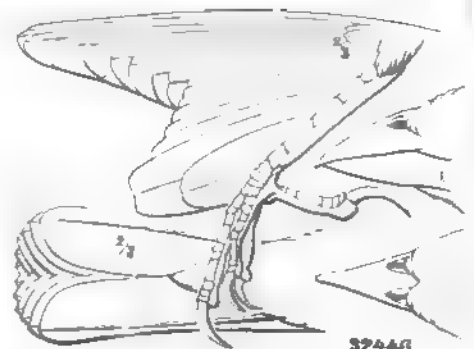
Guiraca caerulea.



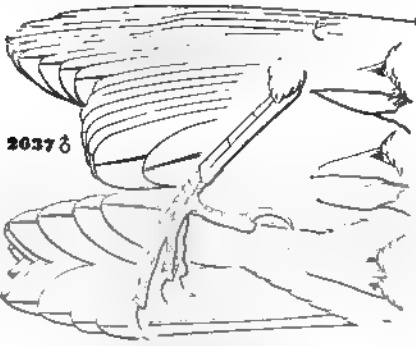
Spiza americana.



Dolichonyx oryzivorus.

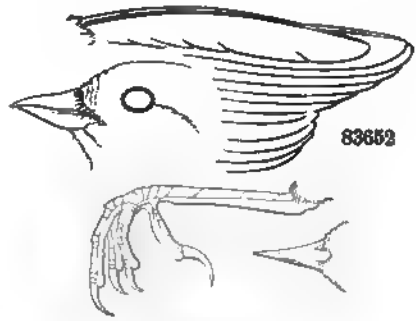


Molothrus ater.



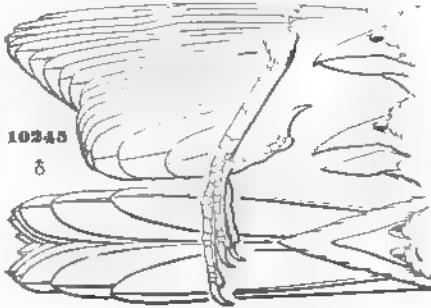
2037 ♂

Melospiza fasciata.



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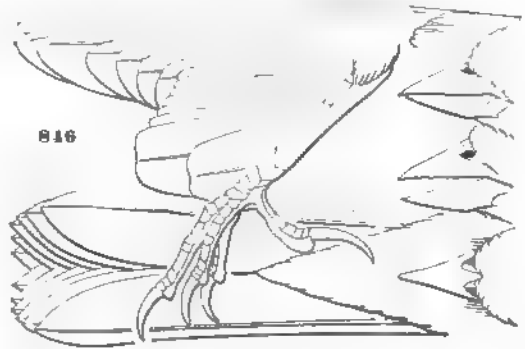
"Melospiza" georgiana.



10245

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Peucaea aestivalis.



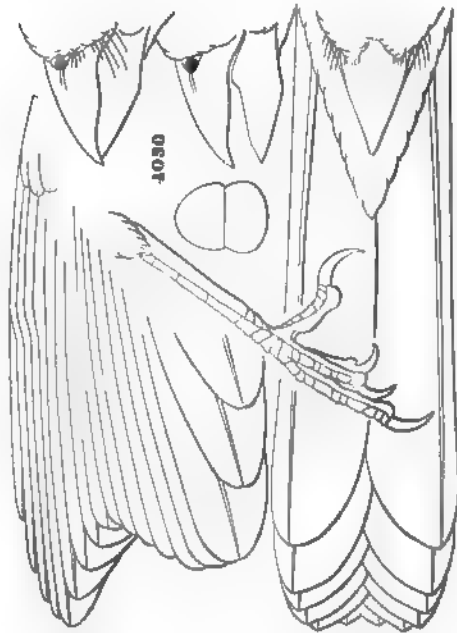
816

Passerella iliaca.



3339 ♂

Pipilo fuscus.



4030

Cardinalis cardinalis.

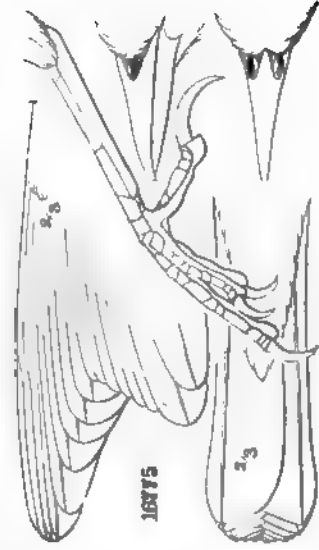
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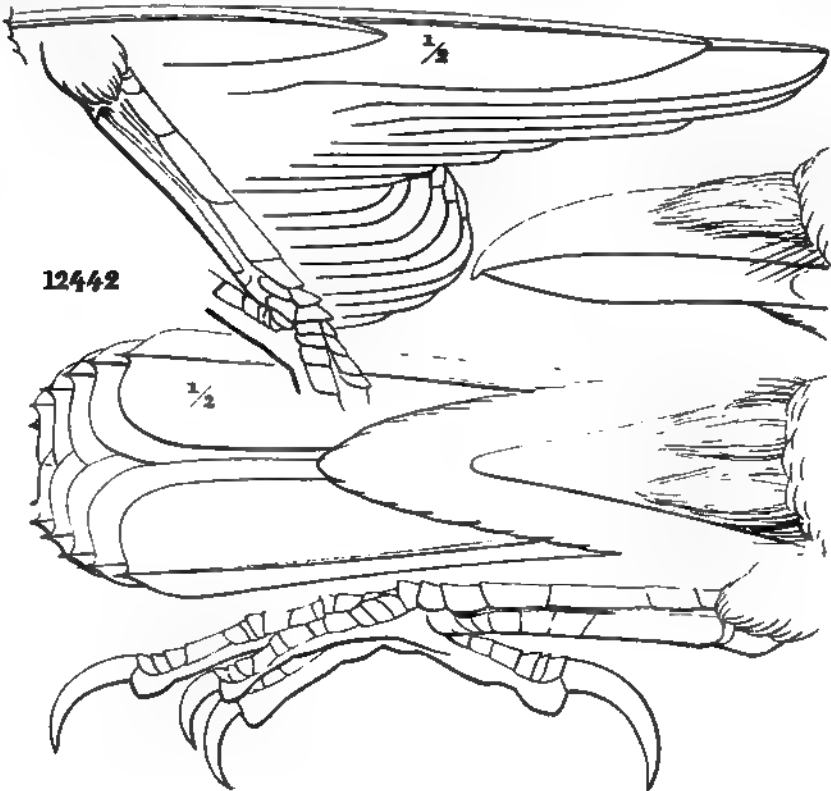
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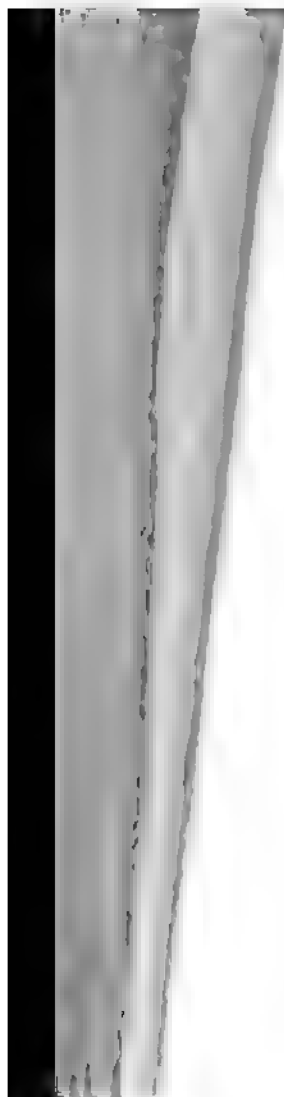
Quiscalus quiscula.



Scolerophagus carolinus.

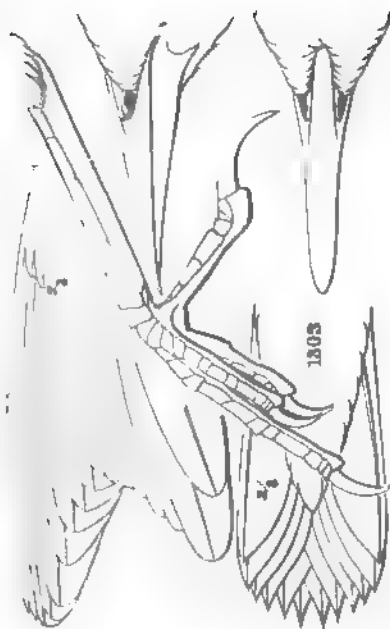


Corvus ossifragus.

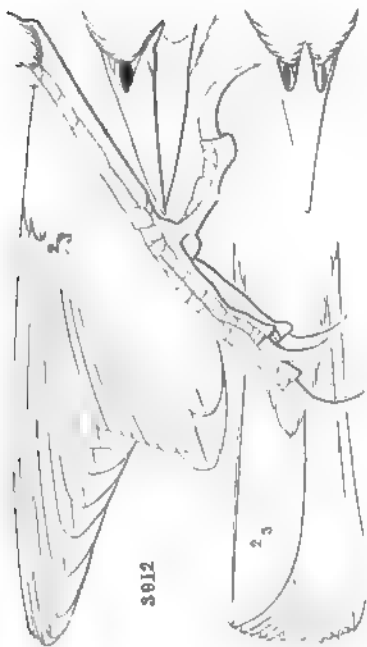




Agelaius phoeniceus.



Sturnella magna.

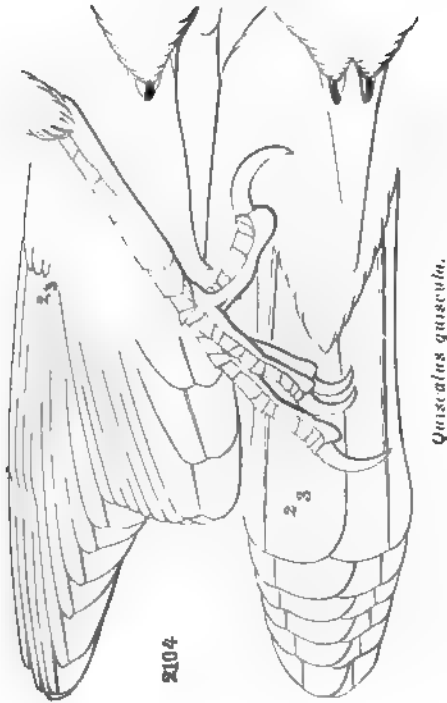


Xanthocephalus cauthoccephalus.

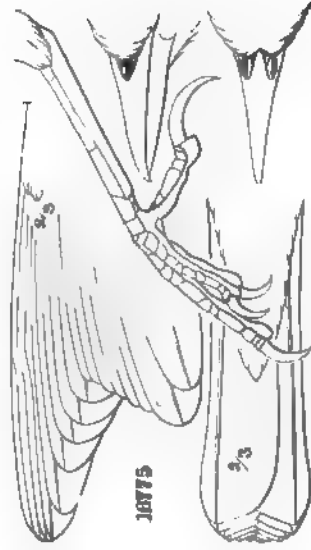


Icterus galbula.

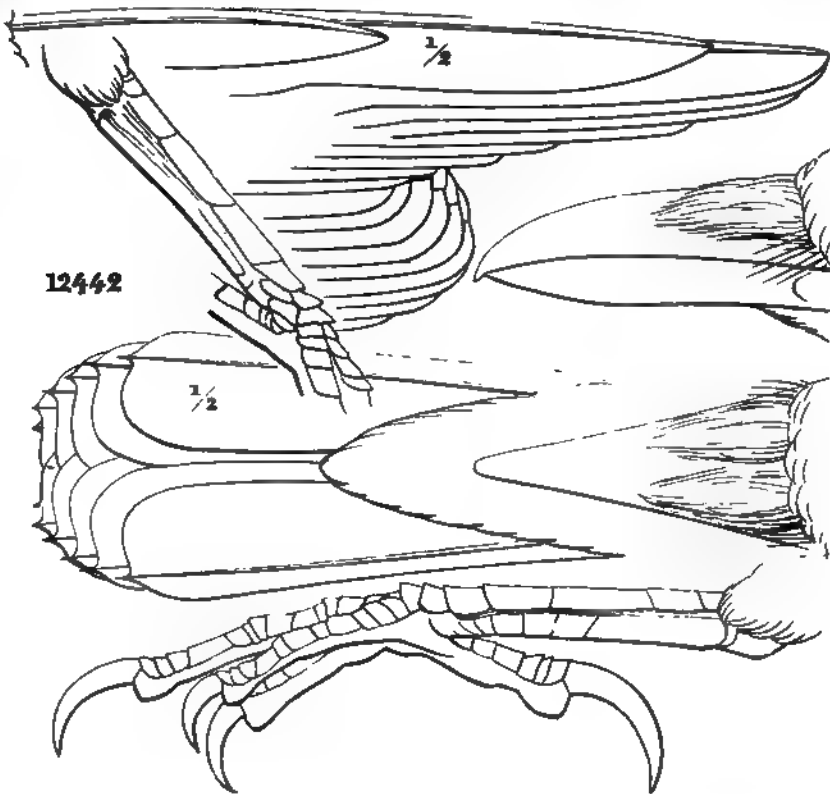
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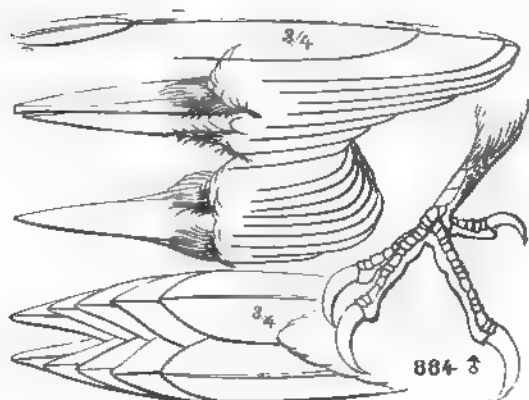
Quiscatus quiscula.



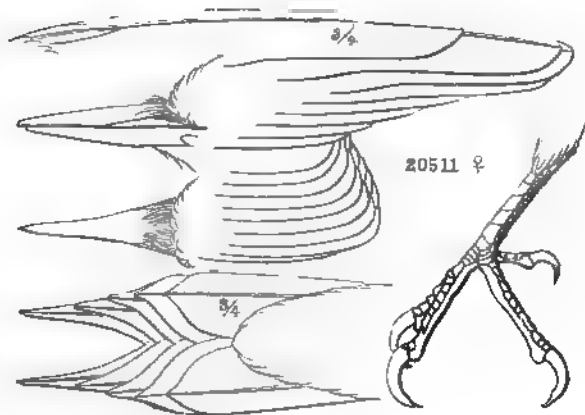
Scolecophagus carolinus.



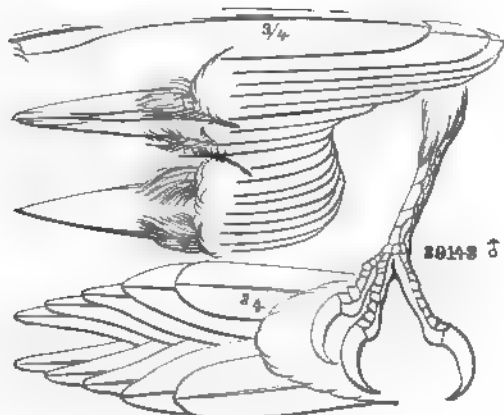
Corvus ossifragus.



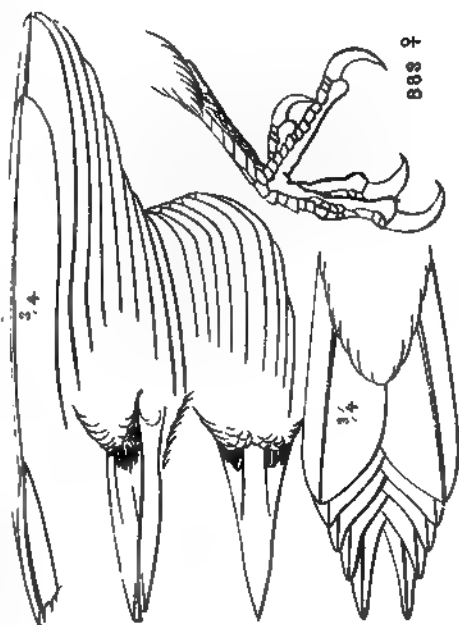
Tryobates villosus.



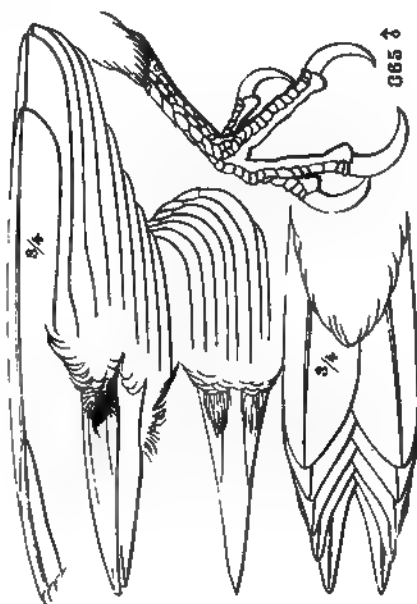
Sphyrapicus varius.



Picoides arcticus.



Melanerpes erythrocephalus.



"Centurus" carolinus.



1449

Tyrannus tyrannus.



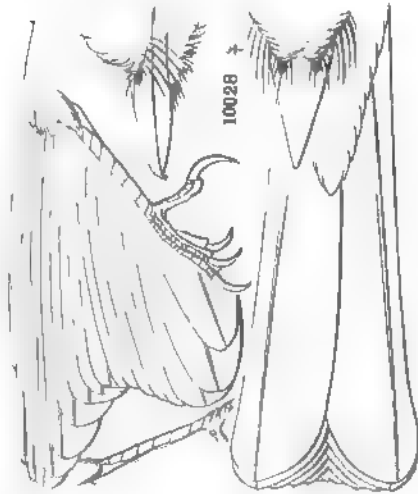
1513

Myiarchus cinerascens.



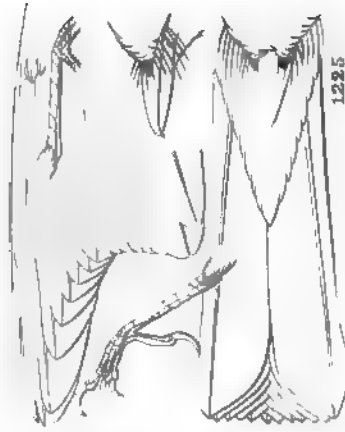
842 ♂

Contopus borealis.



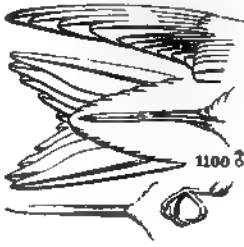
10028 +

Sayornis phoebe.

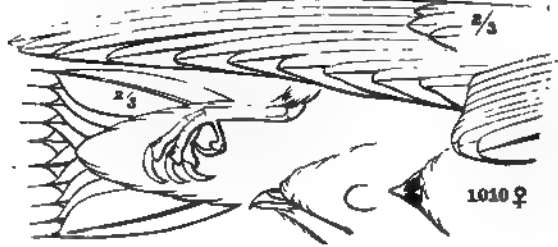


1225

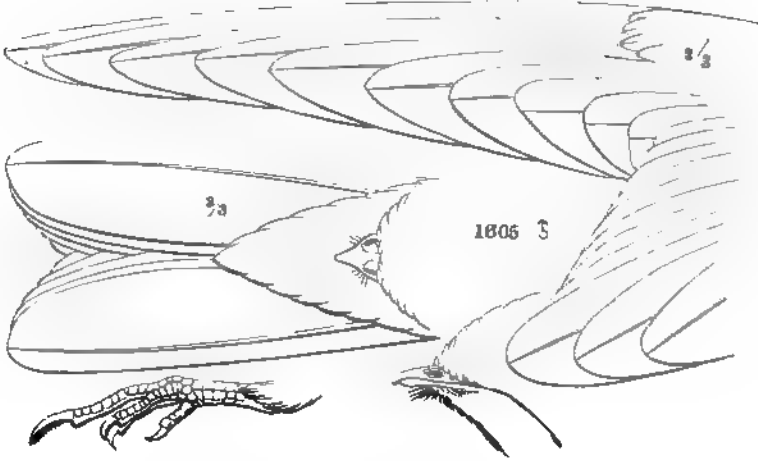
Empidonax acadicus.



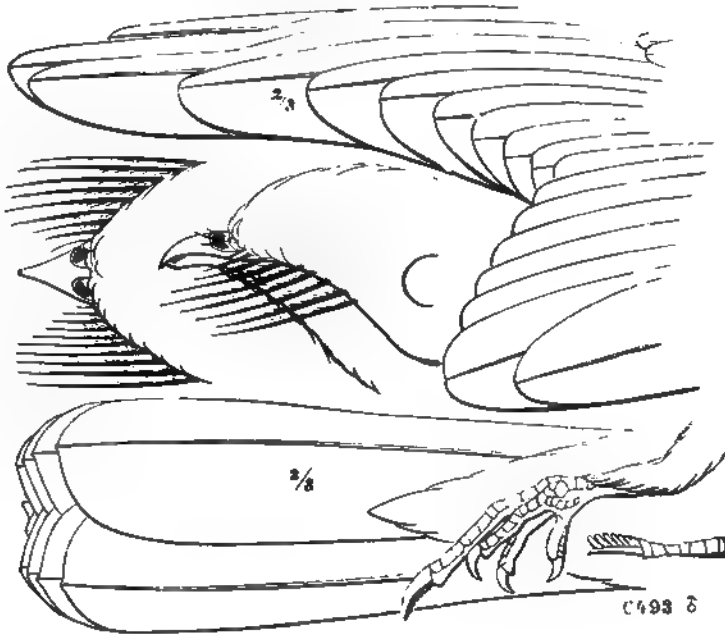
Trochilus colubris.



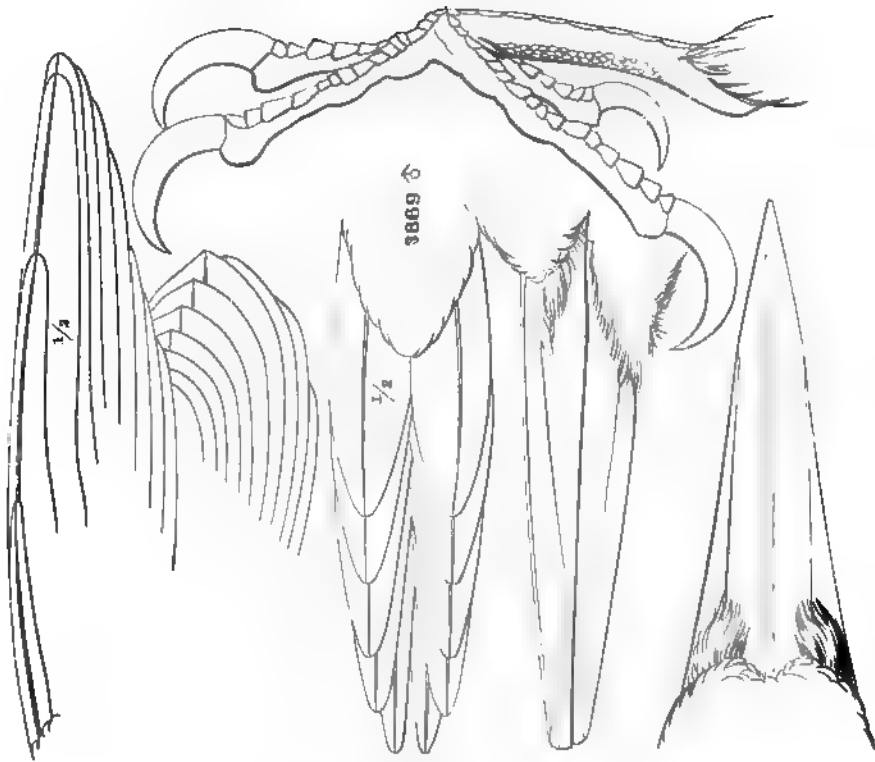
Chætura pelagica.



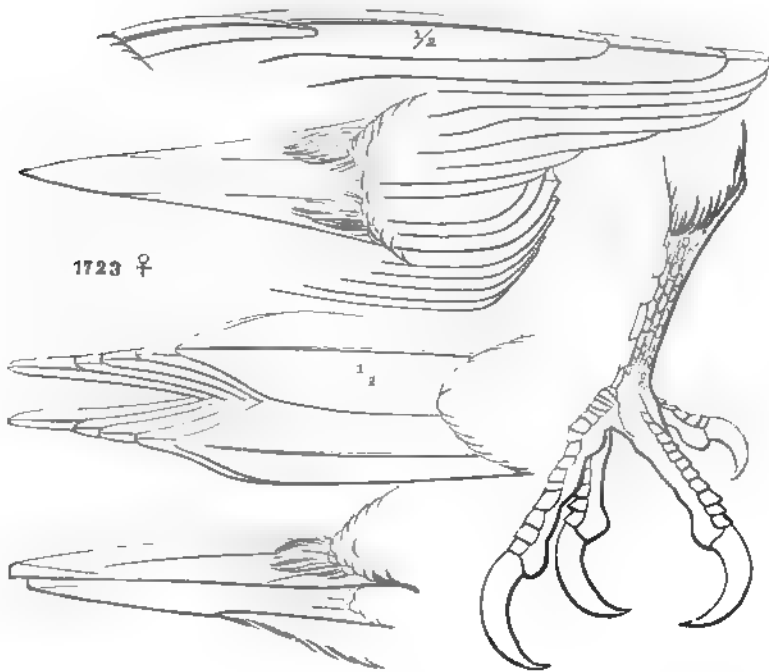
Chordeiles virginianus.



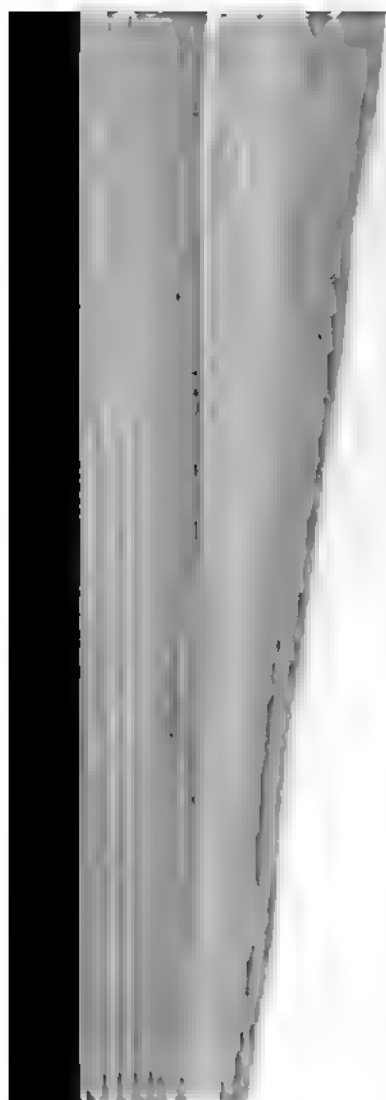
Antrostomus carolinensis.

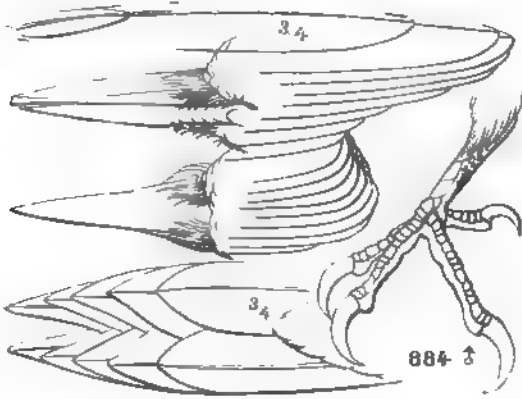


Campephilus principalis.

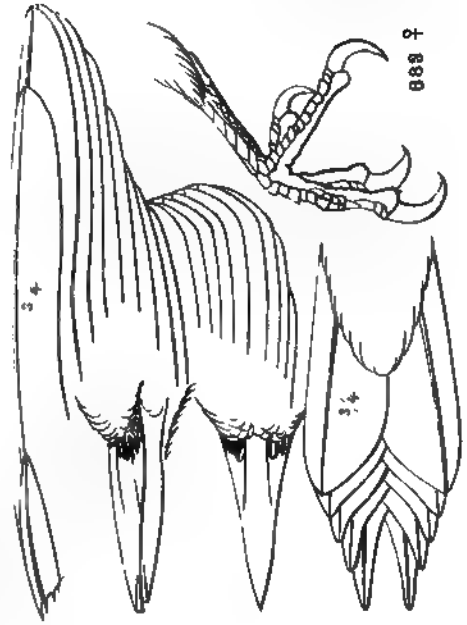


Geophagus pileatus.

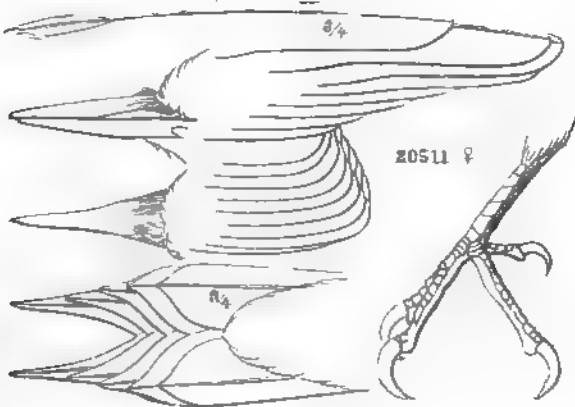




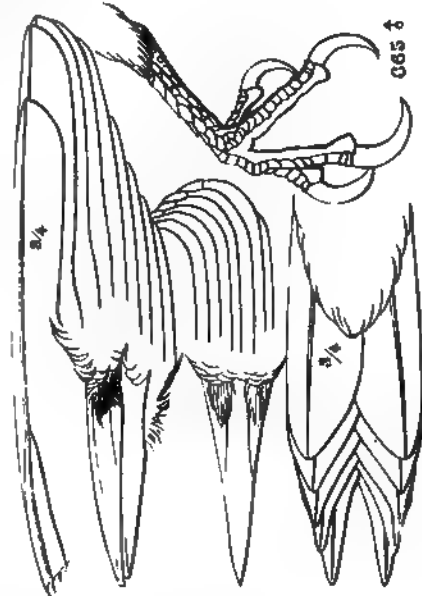
Pycobates villosus.



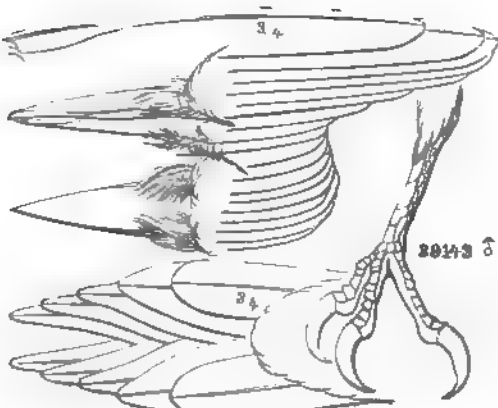
Melanerpes erythrocephalus.



Sphyrapicus varius.



"Centurus" carolinus.

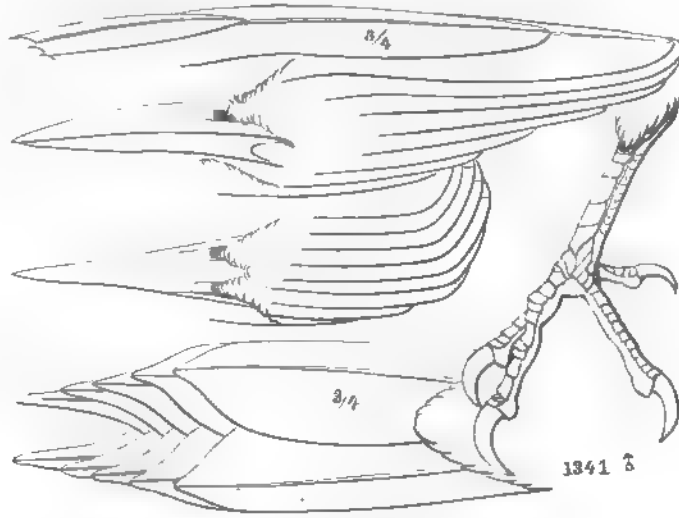


Picoides arcticus.

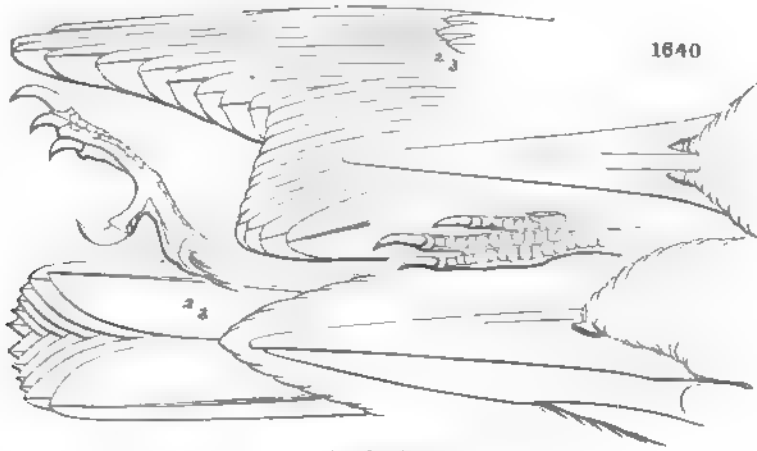
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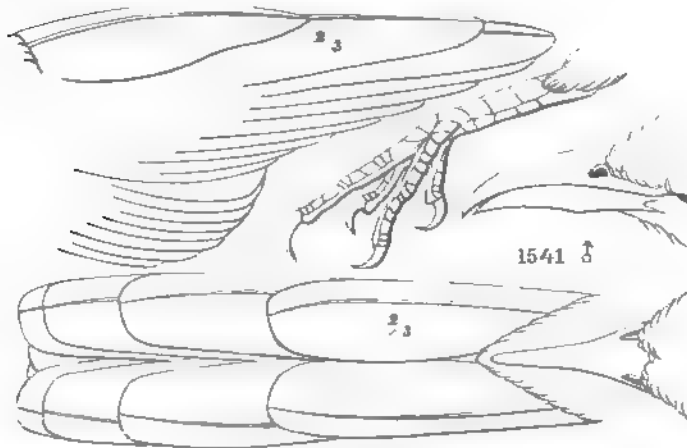
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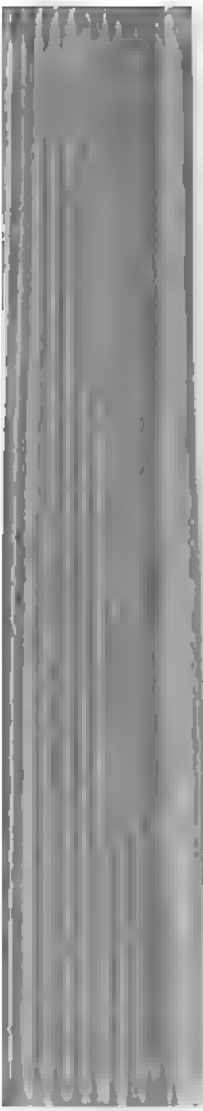
Colaptes auratus.



Ceryle alcyon

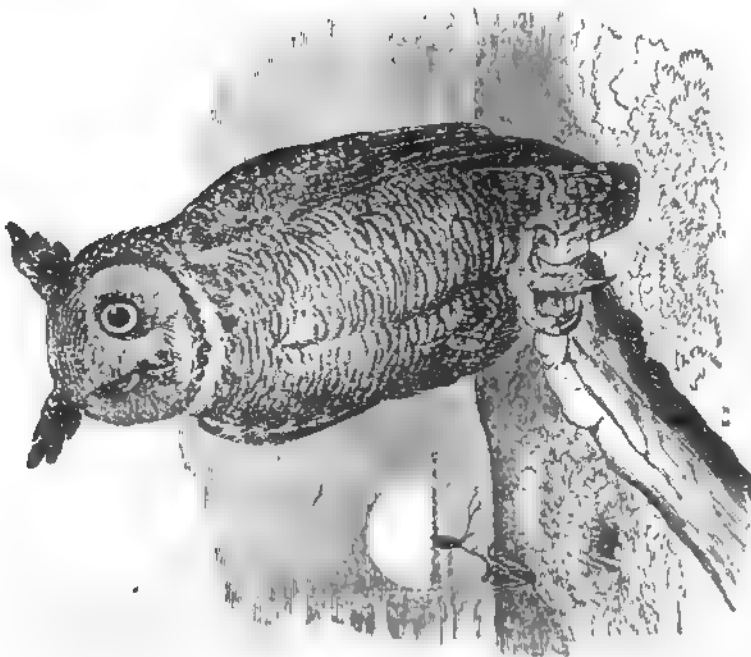


Coccyzus americanus.

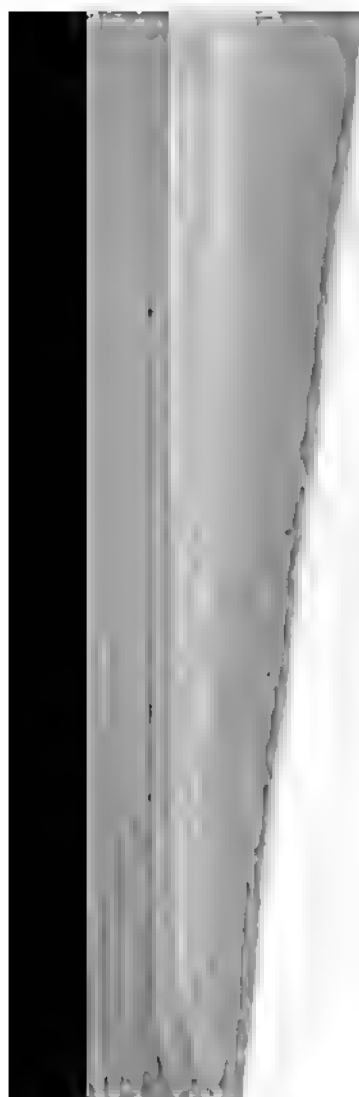


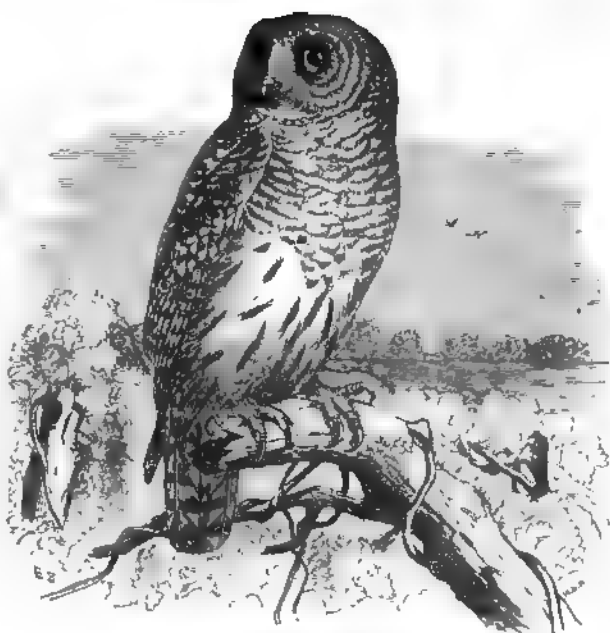


Nyrtes nyctea.

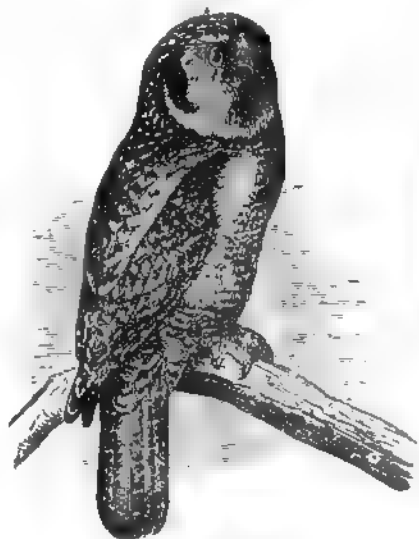


Bubo virginianus.

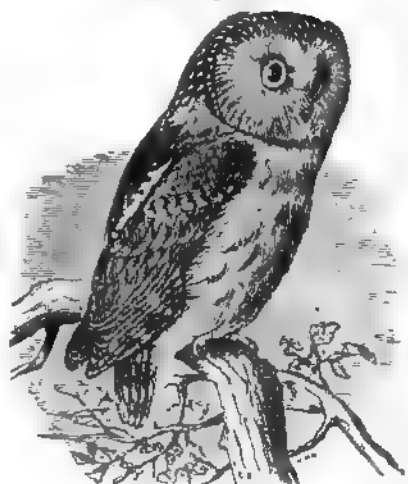




Syrnium nebulosum



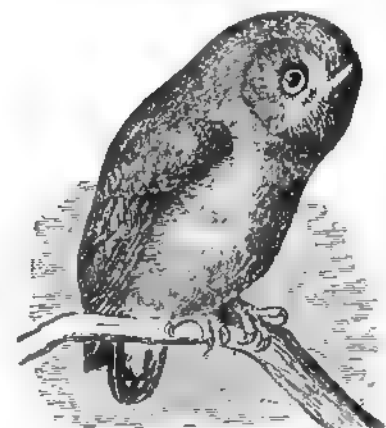
Syrnium caparoch



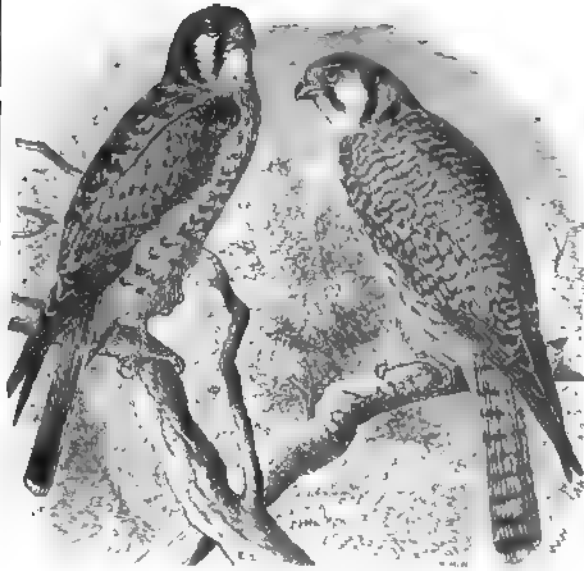
Nyctala acadica. (Adult.)



Nyctala acadica.



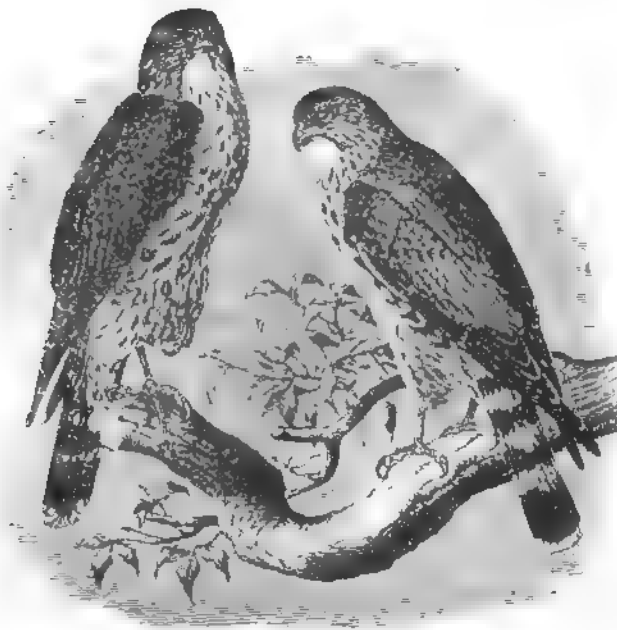
Nyctala acadica. (Young.)



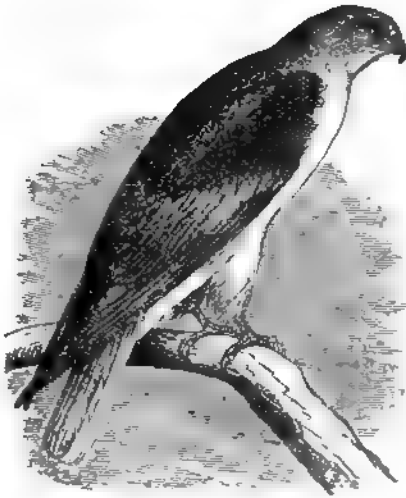
"Tinnunculus" sparverius



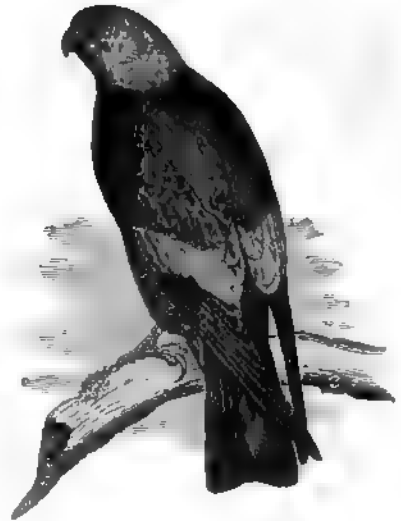
Pandion carolinensis.



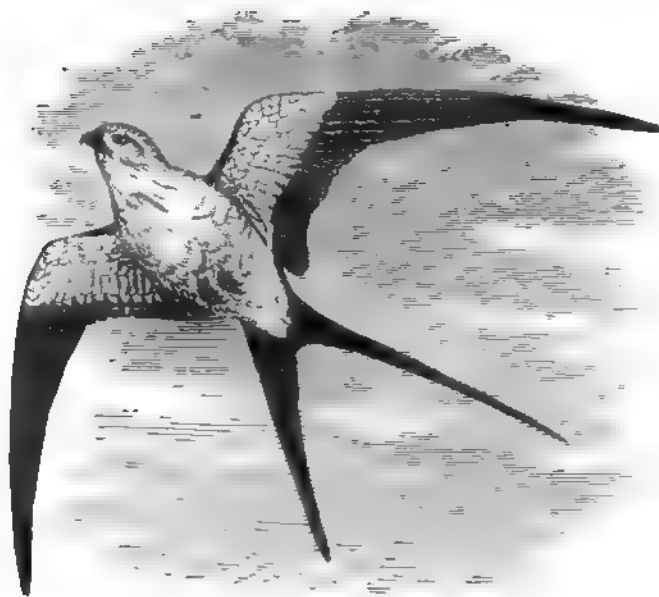
"Bubo" columbarius.



Elanus leucurus. (Adult.)

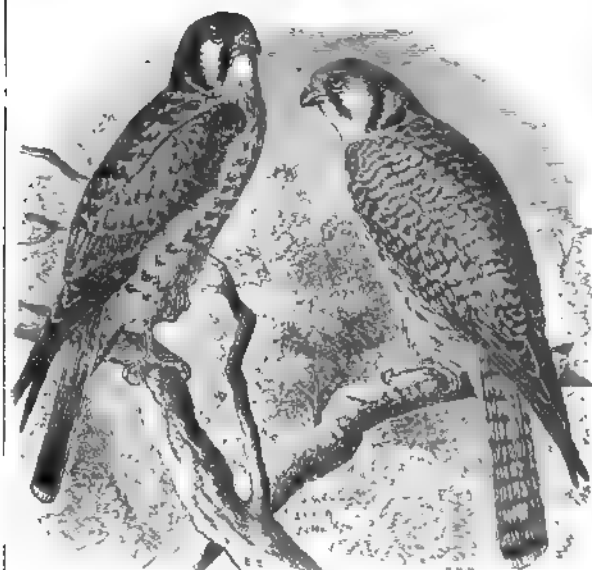


Ictinia mississippiensis. (Adult.)

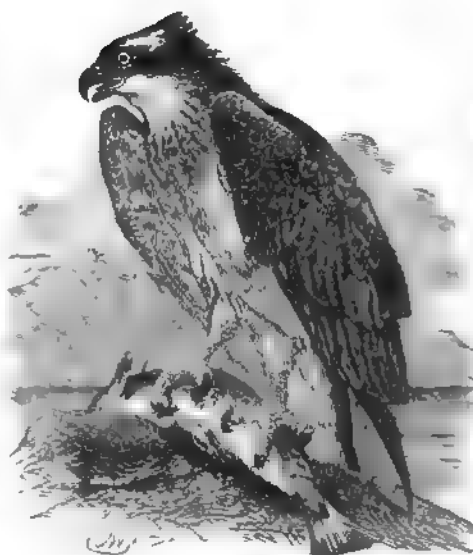


Elanoides forficatus.

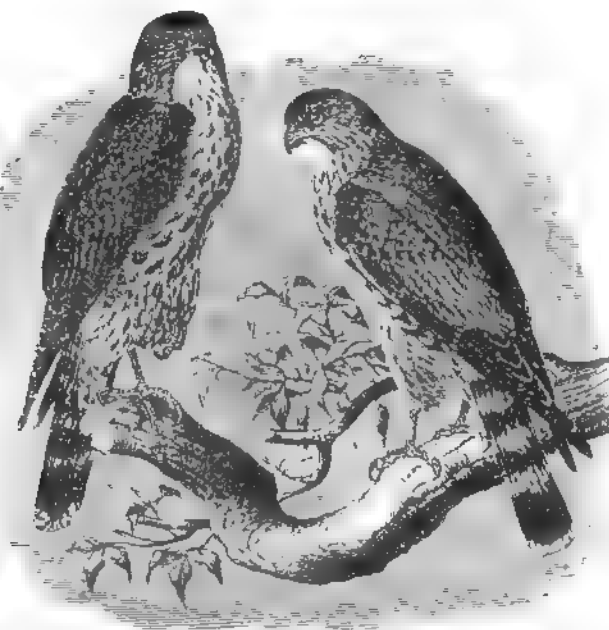




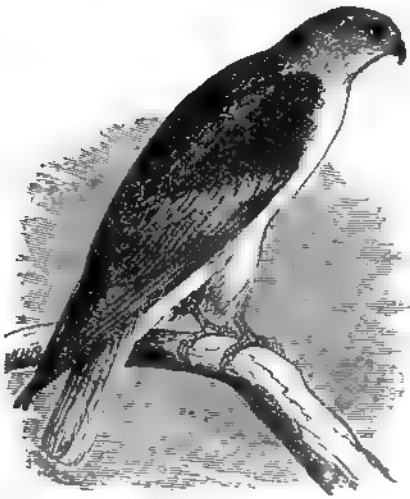
"Tinnunculus" sparverius.



Pandion carolinensis.



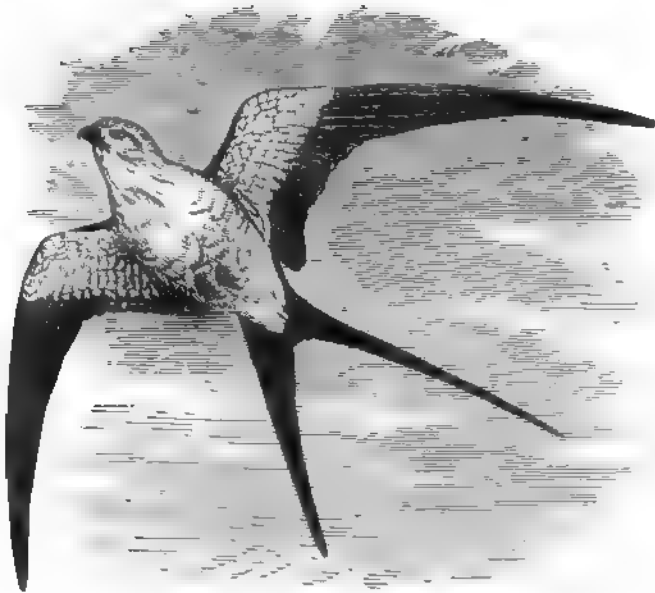
"Bubo" columbarius.



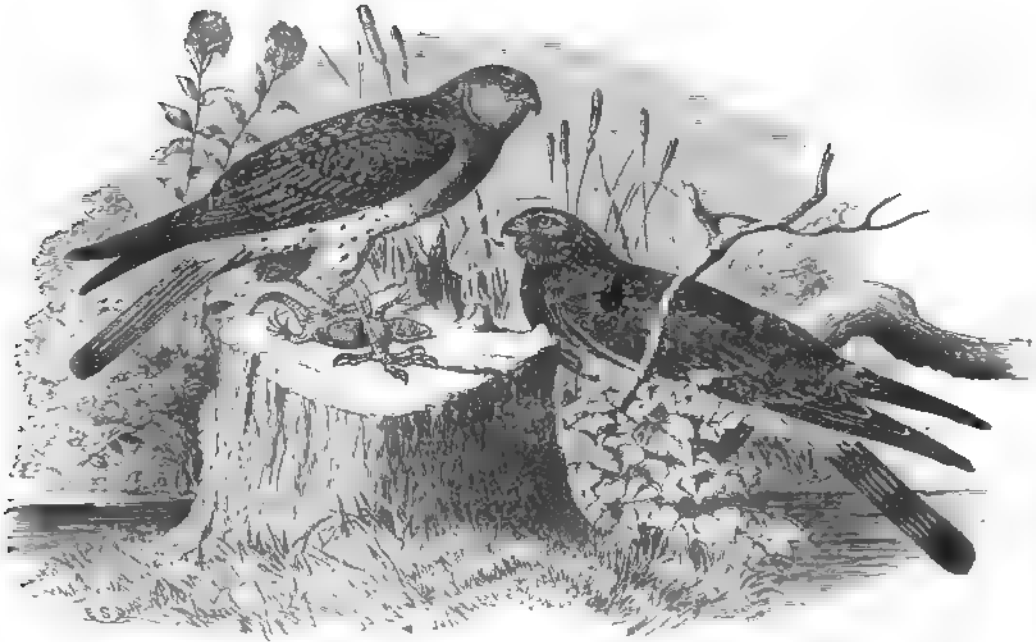
Elanus leucurus. (Adult.)



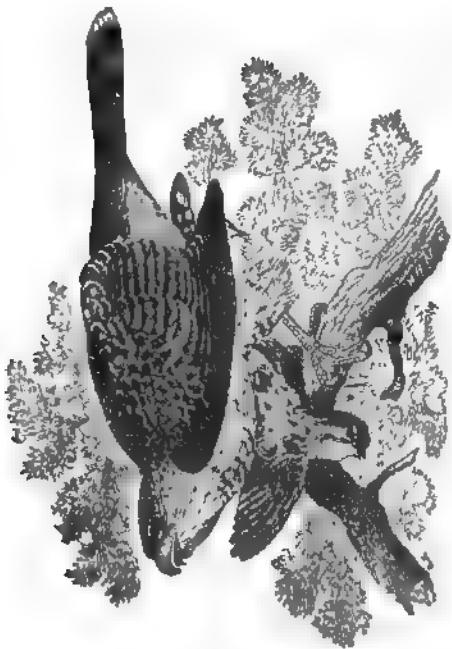
Ictinia mississippiensis. (Adult.)



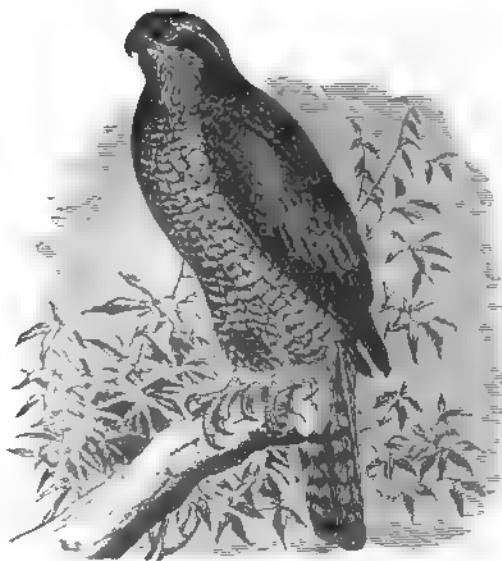
Elanoides forficatus.



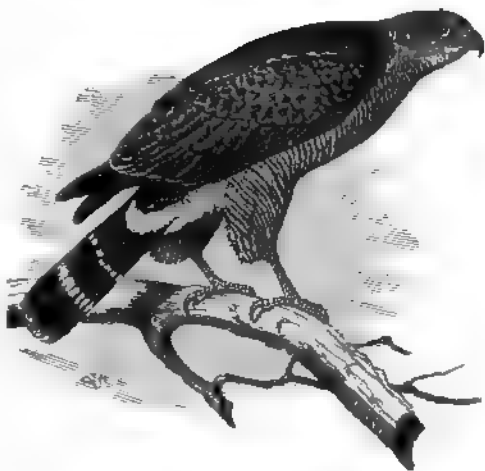
Circus hudsonius.



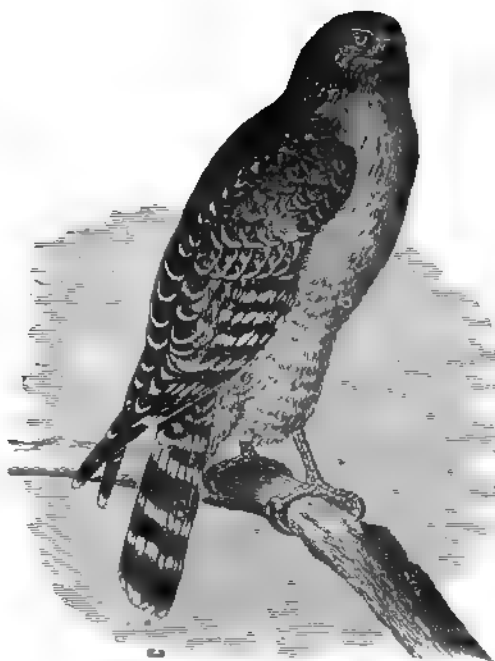
Accipiter cooperii. (Adult.)



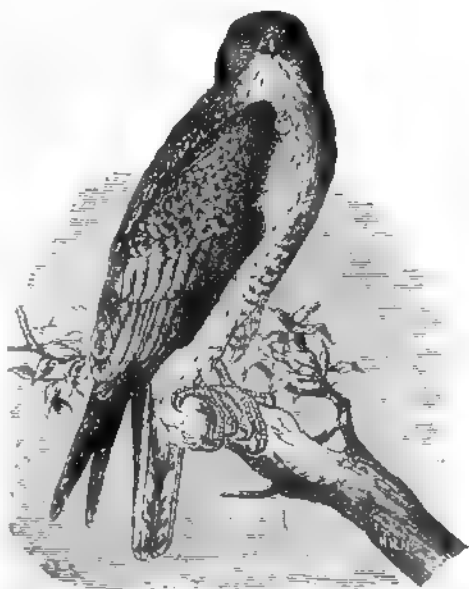
"Astur" atricapillus. (Adult.)



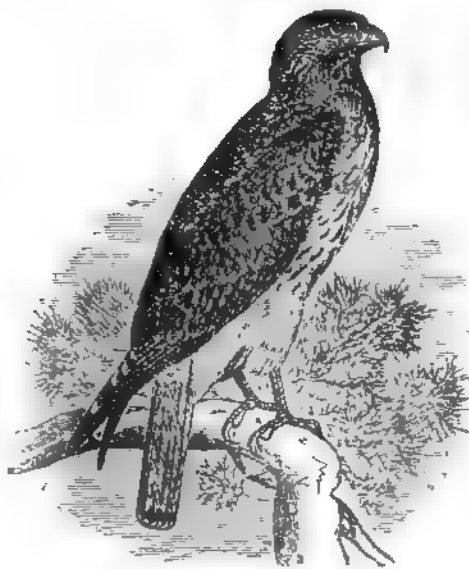
Asturina plagiata (Adult.)



Buteo lineatus. (Adult.)



Buteo swainsoni. (Adult.)



Buteo borealis. (Adult.)



Buteo swainsoni. (Young.)



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54338, ♀

Archibuteo.

(Posterior face of tarsus.)

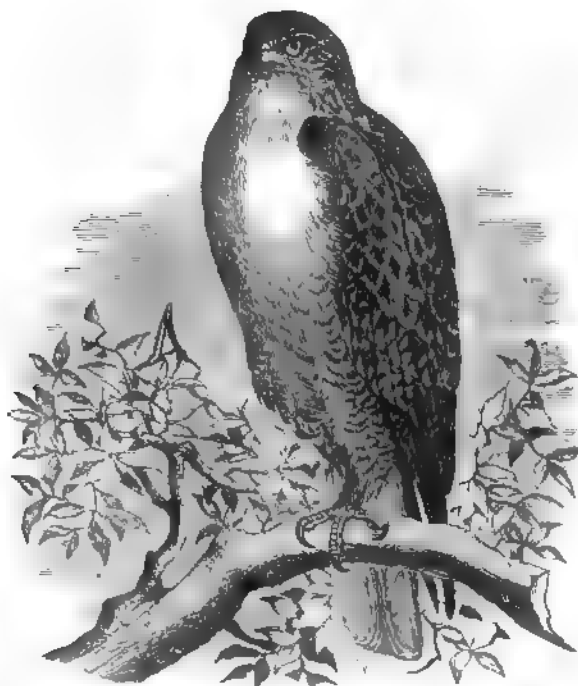


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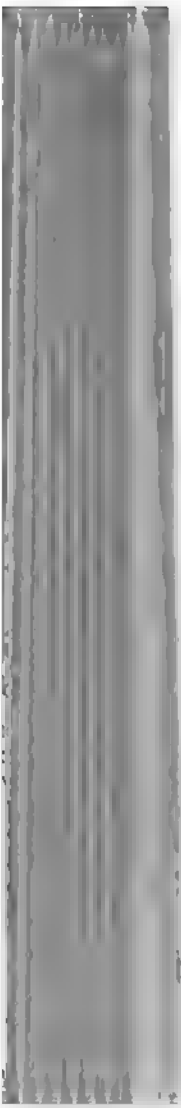
41801, ♀.

Aquila.

(Posterior face of tarsus.)

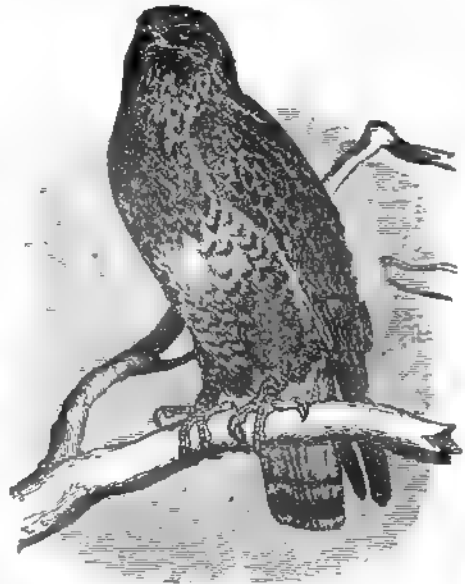


Archibuteo ferrugineus

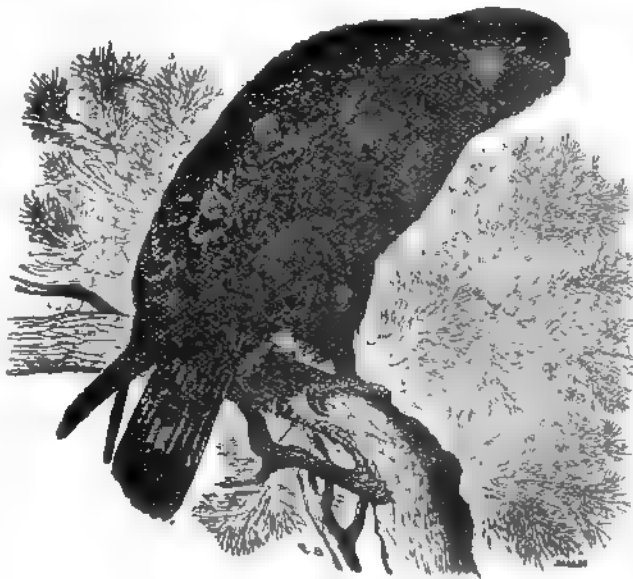




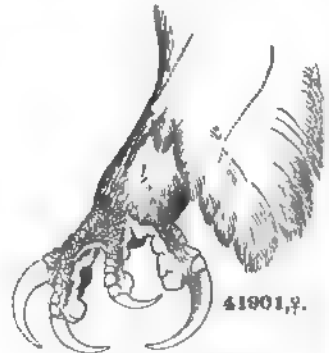
Aquila chrysaetos. (Adult.)



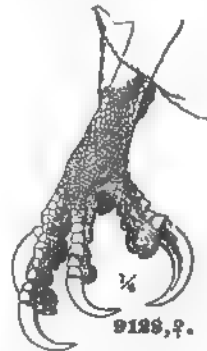
Archibuteo sancti-johannis.
(Light-colored phase.)



Archibuteo sancti-johannis.
(Black phase.)

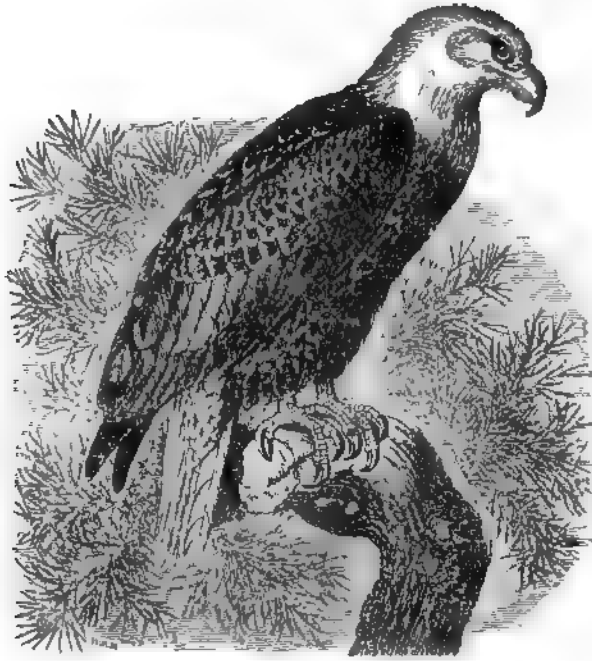


Foot of *Aquila*.

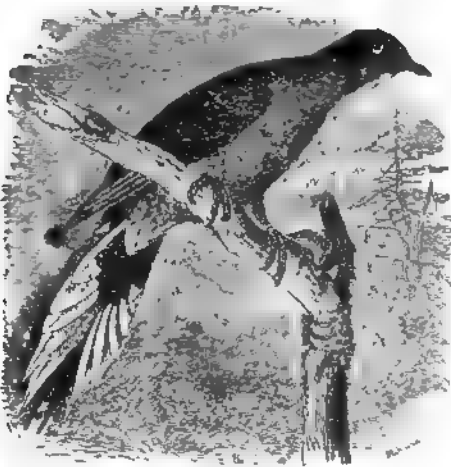


Foot of *Haliaetus*.

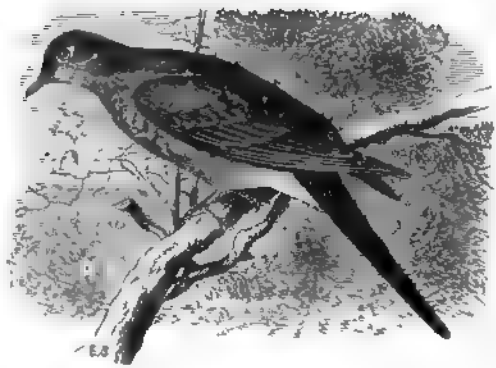
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Haliaeetus leucocephalus. (Adult.)



Ectopistes migratorius.



Zenaidura macroura.

100



Cathartes aura.



Catharista atrata.

